

THE IRON AGE

THURSDAY, JULY 14, 1892.

The See Compound Engine.

The object aimed at by the designer of this engine—Horace See of 1 Broadway, New York—was to simplify the arrangement of the actuating valves for the cylinders and the valve motions operating the valves. The drawing is a side elevation of a vertical compound tandem engine, the steam chests being shown in vertical cross section. The letter A indicates the high pressure cylinder, B the low-pressure cylinder, C and D the piston rod; the usual connecting rod between the cross head E and the crank T is omitted. The two cylinders are tied together by the top frames F and by the exhaust pipe F¹ which connects the two steam chests a b. The frames F² support the cylinders and all the upper parts. The piston valves c d are of the usual form, and their valve stems f, f¹ are connected by rods e g, respectively, to arms secured on opposite sides of the rock shaft. To one end of this rock shaft or beam is attached a rod whose lower end is secured to the eccentric rod K, which is joined in the usual way by a strap to the eccentric h on the main shaft. This eccentric rod, between the eccentric and its outer end, is suspended by a link on a movable center, and connected by a system of rods and levers to a bell crank, m, which is connected by one of its arms and the rod l to the cross head of the reversing engine L. This reversing gear, thus arranged, represents what is known as the "radial" gear, or so-called Marshall valve gear. It is obvious that, upon a reciprocating motion being imparted to the rod depending from the beam G, the latter will be caused to vibrate upon its center, thereby reciprocating the valves c d, the lower valve d rising as upper valve c descends, and vice versa. The steam entering the upper steam chest through the nozzle o will enter the cylinder through the center of the valve and escape at the ends of the valve, when it passes downward, as indicated by the arrow p, through the exhaust pipe F¹ into the steam chest b. It enters the low pressure cylinder from the ends of the valve, and is exhausted through the central portion of the valve, as indicated by the arrow q. The exhaust steam pours around the cylinder B into the rear frame F², which, as a hollow column, serves to conduct the exhaust steam downwardly into the condenser M.

The following advantages are claimed for this construction:

None of the packing in any of the valve-stem stuffing boxes is subjected to the high pressure of the steam coming direct from the boiler, but to only the pressure of the steam after having been at least once exhausted after doing work in a cyl-

inder. This is due to the admission of the initial high-pressure steam only into the interior of the valve of the high-pressure cylinder.

The relative arrangements of the valves also are such that if the cylinders be set to operate vertically the weight of one valve tends to counterbalance the weight of the others.

the valve stem itself, if prolonged, will pass by the side, but dispense with more than one stuffing box on the steam chest of either cylinder and avoid the intervention and multiplication of long rock shafts and beams and rods to operate the valves.

Although the drawings show this system applied only to the double-cylinder compound type of engine, yet so accessible are all the parts, so devoid of complications the arrangement of valves, and so few the connections for actuating the same that the system can be readily extended to the triple-expansion engine with two or three cranks, as may be desired, or to the quadruple-expansion engine with cylinders of suitably increasing volumes, and with any suitable number of cranks that may be desired.

Two Canals.

The two most remarkable waterways in the world are the Sault Ste. Marie Canal in the United States and the Suez Canal in Egypt. The former, often called the St. Mary's Falls Canal or the "Soo," connects the waters of Lake Huron with the waters of Lake Superior. The latter brings the Red Sea and the Mediterranean Sea into deep water communication. The total length of the Sault Ste. Marie Canal is only about a mile—so short that when this canal is brought into comparison with the Suez Canal and some of the other great artificial waterways of the world, its extent seems to be comparatively trifling; but when consideration is had of the purpose for which the Soo canal was constructed and is now maintained by the Government of the United States, it is at once seen that its usefulness as a means of facilitating traffic is greater than that of any other canal the world over. Before proceeding to give the official figures to prove that the St. Mary's Falls Canal stands easily first as a marine commercial highway some few points in the history of the Soo may not be out of order, since they will serve to illustrate how the country lying contiguous to the great lakes has been expanded and developed primarily by the assistance afforded to transportation by this little 1-mile

THE SEE COMPOUND ENGINE.

The arrangement of steam chests is such that the exhaust pipe connecting them serves as a framing to support the upper cylinder or to tie the upper and lower cylinders together.

This system has also the advantage of shortening the cylinder ports by reducing to a minimum the distance between each valve and its cylinder, and the steam chests, being placed circumferentially out of line, not only permit the valve stem and valve rod, either or both, of the smaller cylinder to pass by the side of the steam chest of the larger cylinder, for

stretch of artificial navigation. Previous to the construction of the canal all the outside supplies for places situated on or in connection with the waters of Lake Superior had to be unloaded at the foot of the Sault Rapids, in the St. Mary's River, transported over a portage road to the head of the rapids in the river and then reshipped, a matter of considerable time and great expense. Then, to add to the difficulties and inconveniences of the situation, the rich mines of the Superior country began to attract the attention of manufacturers, and the

transfer and supply business which had become a great industry was found to be totally inadequate to meet the increasing demands for quicker and cheaper dispatch. Therefore, the urgency of the trade called for a ship canal, which in the course of time was constructed.

A glance at any map of the United States will show the situation as above described. At the head waters of Lake Superior will be seen the cities of Duluth, Ashland, Superior, Marquette and other growing towns bordering on the waters of the lake about 1400 miles distant from New York; and the charts of the water route of the lake region will show that nearly 900 miles of the way are deep water lake navigation, the outlet of which is the St. Mary's River, a tortuous, rather narrow stream approximately 75 miles long and separating the northern peninsula of Michigan from Canada.

The water in this dividing line falls, in running from Lake Superior to Lake Huron, a trifle over 20 feet, and 18 feet of this fall occurs at the Sault. The remainder of the descent of 2 feet is distributed over the first 35 miles below that point.

The first canal was built in 1855. The depth of water over the locks was nearly 13 feet, and the amount of annual tonnage which passed through was about 100,000 tons. The Sault Ste. Marie Canal of today disposes of over 8,000,000 tons of traffic in the course of a season.

The old lock was 13 feet; the lock now in use is of the following dimensions: Length, 515 feet; width, 80 feet; openings at the gates, 60 feet wide; depth of water over the gate sills, 16 feet. Thus there is provided, free of any toll, a 16-foot navigable way between the waters of the two lakes.

And now for a few words concerning the Suez Canal, that most successful and important of waterways, so far as the universe outside of the United States is concerned.

The value commercially, strategically and financially of a deep-water channel connecting the Mediterranean and Red seas by way of the Isthmus of Suez is too evident to need much explanation, since it does away with the circuitous route around the Cape of Good Hope for maritime traffic between Europe and the coasts of Asia.

The Suez Canal, extending from Port Said on the Mediterranean to Suez on the Red Sea, runs in a line nearly north and south a distance of 100 miles at sea level without any locks. Its width varies from 200 to 300 feet, according to the strata through which it is excavated; but the bottom width is 72 feet throughout. The depth is 26 feet. The cost of the canal was in the neighborhood of \$100,000,000. The work was all done and the canal opened to traffic at the close of the year 1869, ten years from the time that the work was first systematically taken in hand.

Placing the two canals above described side by side we find that their dimensions are as follows:

	"Soo."	Suez.
Length of canal.....	1 mile.	100 miles.
Width.....	60 feet.	72 feet.
Depth.....	16 feet.	26 feet.

The statement is often made that the tonnage carried through the Sault Ste. Marie Canal is greater than that carried through the Suez Canal. If the Soo Canal was open all the year round like the Suez Canal the difference of the amount and value of business in favor of the American canal as compared with that of the Suez Canal and all other great canals, would be more marked than it is. In order to show this, we abstract the following data from *The Iron Age* of January 21, this year.

In his annual report to General Casey, Colonel Poe, the engineer in charge of the works, discusses the Soo Canal and its business aspects to the following effect:

The canal was opened during the season of 1891 for 225 days. The average number of vessels passing per day for the whole season was 45.3. The size of the vessels averaged 862.1 tons per vessel. Or, arranging the facts and figures more conveniently, we obtain:

Number of days canal was opened.....	225
Total number of vessels passed through.....	10,192
Average number of vessels per day.....	45.3
Total tonnage of vessels passed through.....	8,786,523
Average tonnage per vessel.....	862.1
Total freight tonnage passed through.....	8,888,750
Average freight tonnage per vessel.....	872

The above figures show a slight decrease over the corresponding data for the preceding year, which is accounted for in the decreased shipments of iron ore. If the value of the season's freight be considered a large increase will be noticed, due to the unusually large wheat crop. The total valuation of commerce through the Soo Canal for the calendar year 1891 was \$128,178,208, as opposed to \$102,214,948 for the calendar year 1890.

In order to make a comparison between the figures given above relating to the trade of the Sault Ste. Marie Canal and those pertaining to the Suez Canal, we append some of the facts as contained in the returns furnished to the English Foreign Office by the British directors of the Suez Canal, with respect to the navigation of that waterway during the year 1891. Last year 4207 vessels used the canal, and no fewer than 3217 of them carried the English flag. It may be taken that at least three out of every four vessels navigating this waterway belong to Great Britain. Germany came next and France third, some distance behind. Arranging the data to be culled from the Parliamentary report mentioned above, we find as follows:

Number of days canal was opened.....	365
Total number of vessels passed through.....	4,207
Average number of vessels per day.....	11.5
Total gross tonnage of vessels passed through.....	12,217,986
Average gross tons per vessel.....	2,904
Total net tonnage passed through.....	8,698,777
Mean net tonnage per vessel.....	2,067

By comparing the data of the two tables it is apparent that except in the matter of the size of the ships which traverse the Suez Canal, the commercial movement of the St. Mary's Falls Canal is incontestably the greater. Vessels drawing 26 feet of water can pass through the Suez Canal, whereas vessels of 16 feet only can get through the Soo. In this connection it should be stated that the Government of the United States is now at work upon the construction of a new lock at Sault and of the canal approaches thereabouts, so that a navigable depth of 20 feet will be obtained. The dimensions of the new lock will be: Length, 800 feet; width throughout, 100 feet, with 21 feet of water on the sills.

The Harrington & King Perforating Company, 222 to 226 North Union street, Chicago, have for some time been actively engaged in increasing their facilities. They have erected a large brick building as an addition to their factory, and are now stocking it with special machinery. When the improvements under way are completed they will be in a position to make more prompt deliveries on orders than has for some time been the case. This branch of trade, in common with all other lines of manufacture, is suffering from excessive competition, and it is only by the introduction of improved machinery and processes that a fair margin can be secured on the products manufactured. The Harrington & King Perforating Company have thus been obliged to invest much additional capital in their business to maintain their high standing in the trade. The methods adopted in the conduct of their business are regulated on a remarkably systematic basis, to which

they attribute much of their success. Such a perfect record is kept of every order that but a minute's time is needed to refer to its details. All orders are numbered, and the number once given is carried through all entries, thus enabling complaints to be readily investigated or duplicate orders to be easily filled. The variety of work turned out by this establishment is very great, and the details would seem to be bewildering, but with the perfect system established by the company everything runs as smoothly as if they were turning out the most staple product.

Business Failures.

According to figures furnished by *Bradstreet's*, the number of failures taking place in the United States in the first half of 1892 (South Dakota excepted) was 5351, or 686 less than the number for the corresponding period of last year. Aggregate debts of traders failing in the six months just completed make a like showing, amounting to only \$56,535,521, which is less than for any similar period since the first half of 1887, and less than for any similar half year since 1882, except in 1886 and 1887. The total assets amounted to \$28,935,106, which is less than any previous aggregate since 1882, except for six months of 1886 and 1887.

As an indication of improved commercial conditions throughout the country, a tabulated statement is printed in *Bradstreet's* showing that in the first half of 1890 there were 78 business failures in the United States in which liabilities were in excess of \$100,000, with liabilities aggregating \$21,332,000. In a like portion of 1891 the total number of such failures was 138, and of liabilities \$48,411,089, more than twice as much as in the first half of 1890. In the last six months, however, the number of failures with liabilities in excess of \$100,000 was 83, and the total liabilities were only \$18,422,462, less than 40 per cent. of the total liabilities for six months of 1891 and 90 per cent. of the total for a like portion of 1890.

In the six New England States the total number of failures was almost exactly the same as in the first half of 1890, while total liabilities decreased fully 30 per cent. In the four Middle States there was a slight decrease in the number of failures this year, while the falling off in debts of failing traders was about 50 per cent.

A similar showing is made with regard to the eight Western States, where the number of commercial and industrial embarrassments fell away 265, or 20 per cent., as compared with the first half of 1891, while the decrease in aggregate liabilities was 42 per cent.

In seven Northwestern States business failures decreased 196, or about 33 per cent., but total liabilities were actually larger than in the first half of 1891, due primarily to heavy losses in connection with banking and insurance failures in Minnesota and the mining and clothing embarrassments in Montana.

There was a considerable improvement in the Southern States. There were 91 failures less in 13 States and in the District of Columbia in the last six months than in a like portion of last year, a decrease of 8 per cent. Total liabilities decreased nearly 47 per cent.

Five Pacific States show 70 failures less this year than for six months of 1891, a decrease of about 12 per cent., with a decrease of nearly 9 per cent. in liabilities.

The attorneys for John Roach's estate want \$204,428 from the United States Government, in settlement of arrears alleged to be due on account of the construction of the cruisers Chicago, Atlanta and Boston.

Designing a Crank Handle.

BY A. D. PENTZ.

A crank handle is the most common element in machinery, and is oftener used than any other; and I will indicate principles for its design which can be relied on as being good practice. This crank should always seem to be balanced, and for some purposes it actually should be balanced accurately. In Fig. 1 is shown its form under usual circumstances. The smaller end of the crank is dotted into the counterweighted end, and thus indicates in some degree the amount of metal there is provided to balance the handle on the smaller end. It is perhaps possible to exactly intercalculate the area the handle and the counterweight each should have to balance each other on a crank of this kind, but no engineer who has had the experience will reattempt it. I get toward it by

because a ball is two-thirds of a similar cylinder it in this case would make it necessary that the ball A should have a weight that will balance a cylinder 1.0 inches in diameter and 2.0 inches long. Now, the volume of this cylinder is about 2.0 square inches, which equals in volume the ball having a diameter of about 1.7 inches, which is what this rule makes the ball A to be.

In ordinary places this will be found to give a good enough balance, but in some positions it is required that the balance must be fine to hold a precise adjustment on a horizontal screw or shaft in a vibrating or jarring machine. In which case, because the ball A is usually in this manner of calculating it slightly the heavier end, it is best to drill into the turning center in the end of the ball A, and remove enough stock to exactly balance it, and plug the end tightly afterward. If, however, that end be too light, it is better

have a known or constant volume or weight, so that the ball to balance it may be closely calculated. The diagram in Fig. 3 indicates the rule by which the handle in Fig. 1 is laid down. The shank E is not considered a part of the handle, either in weight or outline, because it, when in place, occupies a part of the ball B, which part is removed to receive it. The line C B represents the whole length of the handle, which is divided into five sections marked 1, 2, 3, 4, 5. The radius A F between sections 3 and 4 is equal to the length of the whole handle C B, and four fifths of it is below the line C B, and the radius G A is half A F. The arc A B is described from the center G and is the outline of two-fifths of the length of the handle. The arc C A is described from the center F, and part of it, I A, is the outline of the two-fifths of the middle part of the handle. The arc J I is described from the center H, has a radius one-fifth the length of the handle and describes the remaining fifth of the handle.

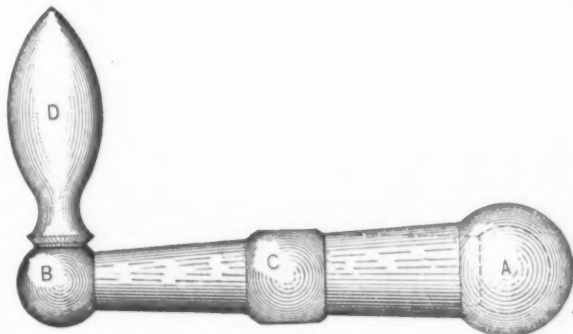


Fig. 1.

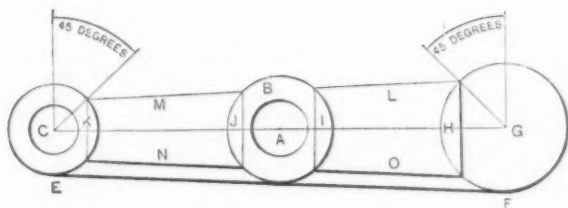


Fig. 2.

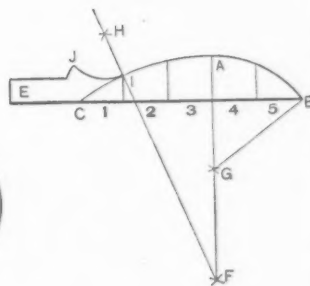


Fig. 3.

DESIGNING A CRANK HANDLE.

a method like this, and do it without any attempt to be so fine as to calculate the differences of leverage, or to compute the comparative weight and balance values of the two frustums that constitute the stems, or take into exact account the two segments lost from both balls.

It is evident that as much of the ball A as is at a greater radius from the ball C than the same parts of the ball B has a greater weight by leverage than so much of itself as has a lesser radius, and more than overbalances it. Therefore, I arbitrarily assume that this leverage will balance the difference between the frustums of the two stems, and that the difference between the two ends of this crank will practically be equal to a round ball in its counterbalancing effect. Again, I further assume that the ball on the counterweight A should, to balance the handle, be as much heavier than the ball B as the weight of that handle. I estimate a handle like D in Fig. 1 to be three-fifths of a cylinder of the same extreme diameter and length. Hence, if that handle be 1.0 inches in diameter and 3 inches long it will equal a cylinder 1.0 in diameter and 1.0 long. The ball B also should be of a diameter equal to that of the handle and

to tool stock off the handle than plug the large ball with a heavier metal.

Having thus found the size needed for the largest ball and determined the length over all of crank needed, lay down the line C G, Fig. 2, of a length the distance from the center of the ball on one end to that on the other. Draw the circle on the center C to indicate the ball B of Fig. 1, and that on the center G to represent the ball A; then lay down the line E F tangent to both these circles. Now bisect the line C A at A, and from that point draw the circle B, also touching the line E F on its circumference. The dimensions of the taper stems are got by the intersections of an angle of 45° from the centers C and G shown, and it is believed that the remainder of this diagram will explain itself to any mechanic.

A crank handle is probably the most diverse-shaped element in machinery and in nothing is the taste of a designer more clearly indicated. While to be symmetrical there is no necessity to have any exact shape of handle, because many forms of outline are satisfactory in this particular; still, in making a crank to balance a handle by a ball on one end, it is requisite to have some rule by which the handle may

The Crown Smelting Company.

Since the removal of the Crown Smelting Company two years ago to their present commodious premises at Chester, Pa., on the line of the Philadelphia, Wilmington & Baltimore Railroad, where they have greatly increased their foundry facilities, their business has, we are informed, expanded in a marked degree. The works are in constant and active operation in filling orders, and the last month has been an exceptionally busy one with them. Some considerable contracts for heavy bronze castings have been completed, and others are now in hand, including a number of propeller wheels and blades, while the regular work in Crown and phosphor bronze and other metal castings has been steadily proceeding to meet demands. The company have just successfully achieved a difficult piece of work in the shape of a turbine wheel 5 feet in diameter for the use of a paper mill operated by water power. The difficulty which had to be surmounted in the production of this casting was the question of expansion and contraction, the outer rim being only 1/4-inch in thickness, with a space of 7 inches between that and an inner circle, in which interval 30 buckets were to be cast—the inner circle above mentioned being 2 inches thick with a flange 5 inches wide. The casting of such a complicated object in one piece so as to meet all the conditions required entailed a large amount of care and calculation, but the company succeeded in obtaining a perfect wheel. They have now received orders for several more of the same description. The material used was gun metal, which was found to best answer the purpose. Another interesting casting recently turned out from the establishment is a baffle plate for the suppression of the spark and smoke nuisance to be used on the Shaw locomotive now being tried on the Philadelphia & Reading Railroad. The first plate tried for this purpose was of steel, which on being tested proved incapable of standing the excessive heat of the fire box. The Crown Smelting Company then produced a plate formed of copper with an admixture of some other metals, cast under hydraulic pressure, which has successfully stood the severest tests and fulfilled the requirements in every respect. The company's specialty, Crown bronze, which they claim to be of exceptional strength and toughness, is an improved phosphorized metal made in special grades for different purposes, which is particularly adapted for rolling mill brasses, locomotive and car bearings, slide valves and similar cases, where its anti-frictional and self-lubricating qualities render it valuable. This metal is produced by a special process which is

peculiar to the Crown Smelting Company. The company's new plant is well arranged and very favorably located. The main foundry building, 50 x 205 feet, is fitted with all the necessary appliances for heavy marine or machinery castings, having a large brick core oven wide enough to admit two carriages, run on rails. A 15-ton crane with an arm 25 feet long is planted near the oven, and an overhead traveler of 6000 pounds capacity is also used for hoisting purposes. The melting house is attached to the foundry, and has a capacity of 12,000 pounds of metal at one heat. This, with a reverberatory furnace, enables the company to turn out a casting of as much as 20,000 pounds weight. The molten metal can be moved to any portion of the foundry by means of a traveling hoist connected with a double overhead rail. The officers of the Crown Smelting Company are George N. Crumbach, president; Frank Burns, vice-president; Henry T. Davis, secretary and treasurer, and John T. Brown, superintendent.

The Cost of Magnetic Concentration.

In a supplementary paper on magnetic concentration, at the Tilly Foster Mine, F. H. McDowell of New York reports the results of work as follows:

Table of Results for 1890 and 1891.

	1890. Tons.	1891. Tons.
Ore used.....	33,304	34,515
Concentrates made.....	12,305	13,066
1 ton of concentrates from.....	2.70	2.65
Cost per ton of concentrates.		
Ore to mill, assorting and crushing.....	\$0.58	\$0.45
Labor:		
Mill.....	.40	.35
Ore bin.....	.05	.07
Removing tailings.....	.03	.07
Repairs in mill.....	.12	.11
Analyses.....	.02	.03
Supplies for repairs.....	.33	.32
Coal.....	.57	.43
Repairs in mill, January and February, 1891.....		.08
Six new cars.....		.08
Cost of 1 ton.....	\$2.10	\$1.90
Per cent. of iron in ore.....	27.17	27.38
Per cent. of iron in concentrates.....	49.54	49.44
Per cent. of iron in tailings.....	10.04	11.00
Number of days run by mill.....	238.7	208.8

From the time the plant was put in operation, in 1890, to January 1, 1892, there have been 78,915 tons sent to the mill, of which 60,827 tons came from the dump and 18,088 from the mine, and the total concentrates shipped to January 1, 1892, were 27,462 tons. The cost of making 1 ton of concentrates has been reduced from \$2.10 in 1890 to \$1.90, and this has been accomplished in the face of an abnormal increase of expenses, due to the shortened season brought about by the drought, the laying of draws for the new reservoir system, the building of walls for the increased storage of tailings and the purchase of several new cars.

The scheme of making the mechanical and other laboratories of scientific schools self sustaining appears to be growing in favor, and we see evidence of enterprise upon the part of some of the professors to attract business to their especial departments. Sibley College, Cornell University, sends out circulars from the Department of Experimental Engineering, signed by Dr. Thurston, in which attention is directed to their facilities for making tests of strength of materials, lubricants, efficiency of steam engines, &c. Attached to it is a schedule of prices signed by Professor Carpenter. This is a comparatively new industry, and it is probable, there being so few in the field, there will be no cutting of prices between the different scientific schools and colleges. Where such a limited number are interested it will be a simple matter to form a protective combination and establish rates for tests.

WORLD'S FAIR NOTES.

All of the great World's Fair buildings, except two, are practically completed. A portion of the interior finishing and decorating is all that remains to be done on most of them. On the Manufactures Building and Machinery Hall work is being pushed 16 hours a day, and they are fast catching up with the other structures.

More than 1000 men are now at work on the mammoth Manufactures Building. The force was recently doubled by order of the exposition authorities, who concluded that the contractor was not making as rapid progress as was desirable. The authorities are determined that all of the buildings shall be completed in time for dedication in October, and the public may be assured that this will be done. The total number of workmen at Jackson Park now exceeds 7000. It will probably be increased soon to 10,000 or more.

The exposition is not out of funds. Treasurer Seeberger submitted to the Board of Directors at the meeting last week his monthly statement of the condition of the exposition finances. It showed a balance on hand of something over \$2,000,000 and expenditures up to date of over \$7,000,000. In addition to the money now in the treasury there is \$500,000 due from the city of Chicago and \$1,000,000 from subscribers to the capital stock. The cash on hand and the money in sight reaches \$3,700,000. The reports that the treasury was bankrupt arose from the exhaustion of the Government appropriation for the expenses of the National Commission for the fiscal year ended June 30.

Provisions of the New Appropriation.

In the United States Senate on the 6th inst. Chairman Allison reported the Sundry Civil bill with its World's Fair amendments to the Senate. As the Sundry Civil bill came over from the House it merely appropriated the remainder of the \$1,500,000 provided for in the original act for the Government exhibit and the expenses of the National Commission. The Senate Appropriation Committee has raised this limit by something over \$500,000 and has incorporated the souvenir coin proposition in a separate section. The amount for the Government exhibit and for clerical help is raised from \$316,500 to \$500,000, and that for the National Commission from \$95,000 to \$320,000, of which the Ladies' Board is to get \$138,000. No change is made in the salaries, but the Director-General is allowed \$10,000 for incidental and contingent expenses of his office. The National Commission is permitted to hold two meetings during the year instead of one. The House provision for closing the Government exhibits Sundays is retained, but not enlarged, so that the Senators who wanted the whole exposition closed Sundays will have to make the fight in the open Senate. The Government aid proposition is made a separate feature of the bill, as follows:

Section 2. That for the purpose of aiding in defraying the cost of completing the work of preparation for inaugurating the World's Columbian Exposition, authorized by the act approved April 25, A. D., 1890, the Secretary of the Treasury is authorized and directed to have recoined \$5,000,000 in half dollar silver coins from the uncurrent subsidiary silver coins abraded below the limit of tolerance now in the Treasury, which coins shall be of the same weight and fineness, and have in all other respects the same qualities as the silver half dollar now authorized by law; said coins shall also be of such design and be stamped and engraved with such inscriptions and devices as will designate their value as coins of the United States, and also make them suitable souvenirs of said celebration of the 400th anniversary of the discovery of America by Christopher Columbus, and there is hereby appropriated from the Treasury the said \$5,000,000 so coined; and the Secretary of the Treasury

is authorized to pay the same as lawful money to the World's Columbian Exposition monthly in such amounts as may be needed, in his discretion, upon detailed estimates of the expenditures for the succeeding month certified to him by the president of the World's Columbian Exposition, and by the Director General of the World's Columbian Exposition, to be approved by the Secretary of the Treasury, for labor to be done, materials to be furnished and services to be performed in prosecuting said work of preparing said exposition for opening May 4, 1893.

Provided, that before the Secretary of the Treasury shall pay to the World's Columbian Exposition any part of the said \$5,000,000 satisfactory evidence shall be furnished him showing that the sum of \$10,000,000 provided for by the fifth section of the act of April 25, 1890, has been collected and disbursed as required by said act; and that the said World's Columbian Exposition shall furnish a satisfactory guaranty to the Secretary of the Treasury that any further sum actually necessary to complete the work of said exposition to the opening thereof has been or will be provided by said corporation; but nothing herein shall be so construed as to authorize the delay or postponement of the preparation of the souvenir coins heretofore provided for, and there is hereby appropriated out of the money in the Treasury not otherwise appropriated the sum of \$100,000, or so much thereof as may be necessary, to reimburse the Treasury for loss on such recoinage.

Sections 3 and 4 establish regulations for the withdrawal of the money from the Treasury and the reimbursement of the Government after the fair is over, in which the United States will receive a proportional share with the stockholders and the city of Chicago.

Sec. 5. That 50,000 bronze medals and the necessary dies therefor, with appropriate devices, emblems and inscriptions commemorative of said exposition celebrating the 400th anniversary of the discovery of America by Christopher Columbus, shall be prepared under the supervision of the Secretary of the Treasury at a cost not to exceed \$60,000, and the Bureau of Engraving and Printing, under the supervision of the Secretary of the Treasury, shall prepare plates and make therefrom 50,000 vellum impressions for diplomas at a cost not to exceed \$43,000. Said medals and diplomas shall be delivered to the World's Columbian Commission, to be awarded to exhibitors in accordance with the provisions of said act of Congress, approved April 25, 1890, and is hereby appropriated from any money in the Treasury not otherwise appropriated, the sum of \$103,000, or so much thereof as may be necessary, to pay the expenditure authorized by this section, said sum to be reimbursed to the Treasury from the funds of the said World's Columbian Exposition upon the delivery of the said medals and said diplomas; and authority may be granted by the Secretary of the Treasury to the holder of the medal, properly awarded to him, to have duplicates thereof made at any of the mints of the United States from gold, or silver, or bronze, at the expense of the person desiring the same.

The Board of Control have decided to ask a further amendment to the bill, so that \$400,000 will be appropriated for the payment of jurors, and their appointment shall be made mandatory.

Largest Cannon Ever Constructed.

Krupp of Germany will exhibit at the World's Fair the biggest cannon ever constructed. It will weigh 122 tons. A. Lauter and G. Gillhausen, engineers, reached Chicago last week to make arrangements to install the big gun.

"We have had great difficulty," said Herr Lauter, "in making provision for unloading the cannon and transporting it to Chicago. In the first place, there isn't a derrick in America sufficiently strong to hoist the gun from the ship. In the second place, the railroads and railroad bridges between Chicago and New York are not entirely adequate to carry such a load. The special car on which the cannon will be shipped will itself weigh nearly 20 tons, so that almost 142 tons will be comprised in the single load, the strain of which will have to be sustained by the railroad bridges. The Pennsylvania company say they can handle the car and gun. But every mile of track and every bridge over which this immense

load must pass will have to be inspected before we can feel certain that the exhibit will be safely landed in Chicago."

Herr Krupp was not inclined to go to the expense of sending the monster gun to Chicago until he was invited to do so by Emperor William. The Emperor's invitation, it appears, was equivalent to a demand, and Herr Krupp did not hesitate to obey.

Russia's Exhibit.

Russia will make a very extensive exhibit. It has made a preliminary appropriation of 50,000 roubles, or \$38,600, but will spend altogether, it is reported, more than half a million dollars on its representation. It spent over \$300,000 on its exhibit at the Philadelphia Centennial, and it is now preparing to greatly surpass what it then accomplished. The Russian exhibits will include elaborate representations of Russian manufactures, agriculture, marine and transportation interests. Forestry, fisheries and mines will also be represented. The transportation section will be of especial interest, including street cars, droskies, troikas, carriages, carts, sleighs, canoes and a number of comparatively obsolete vehicles peculiar to Russia. The art section promises to be fine, particularly in paintings and bronzes. Among the paintings already offered for the fine art galleries are two great historical canvases belonging to Ivanovski, and representing the discovery of America and landing of Columbus. The Russian Commission has also arranged for an elaborate display of the beet sugar industry, which is of great importance in Russia. Count Bobrinski, a very wealthy and influential gentleman, who owns great sugar manufactories in Southern Russia, has been requested to arrange a collective exhibit, and also sketches and statistics showing the plantations of beet root, the appliances used for making and refining sugar, and the advantage of America's importing Russian sugar. The Ministry of Public Domain, it is reported, will appropriate a separate sum of money for making a special collective exhibit of peasants' local industries from several of the Russian provinces. The manufacturers of Poland and Finland are preparing to make a very large exhibit in the Russian section.

Holland will Exhibit.

Holland, which has declined to participate in previous expositions, has decided to come to the World's Fair, and the King has appointed a commission composed of the leading citizens and business men of the kingdom. Consul Thayer, stationed at the Hague, has sent the names of the commissioners, who are as follows: M. Nees, vice-president of the Rotterdam Chamber of Commerce; B. Heldring, director of the Netherlands Trading Company; G. M. Boissevain; Ibr Svan Citters, clerk to the Minister at Waterstaat; and G. Birkhoff, Jr., the Netherlands Consul at Chicago.

It took a great deal of work on the part of merchants and prominent people interested in the exposition to get the King to recognize the World's Fair, but now that he has done so it is the intention to have a thoroughly characteristic exhibit. Nearly all the leading industries in the Kingdom have already pledged their active co-operation in the development and maintenance of an adequate representation at Chicago.

The special buildings will represent various styles of architecture, and the exhibit to be made at headquarters will be characteristically Dutch, illustrating the life and surroundings of the Dutch people. There is a desire, among other things, to build a canal running through the center of the allotted space, to have a Dutch dairy showing the process of butter and cheese making, and to have specimens of Dutch cattle.

Allotments of Space to be Made.

Director General Davis has decided to begin the allotment of space within a few days to intending exhibitors at the exposition. Up to this time he has received from the United States applications for space from over 6000 firms. For the last two months the majority of these people have been hounding the Director-General and the chiefs of departments for permits granting them space; but no further attention has been paid than to inform the applicants that the question would be decided soon.

The different department chiefs have received from the Director General a circular letter of instructions telling them to furnish him by July 15 a classification of all applications, both domestic and foreign. He wants to know how much room each chief can set apart in his special building for every class of industry represented in accordance with the system of classification. His circular says the question of locality should be carefully considered with a view of encouraging a fair illustration of the general development pertaining thereto. In case there has been unusual development in certain localities of which little is known to the public they should make special effort to secure a representative line of exhibits. He further informs them that by July 15 they must be prepared to send drawings of ground floor plans of buildings of foreign commissions, indicating the amount of space and locality accorded to each.

It is not probable that any certificates will be issued before August 1, and it may be much later than that time, but whenever it comes there is an expectancy on the part of the department chiefs that a great howl will be raised by those who wish to exhibit. They think this will be the case, because of the fact that in each one of the department buildings not less than three times the amount of space available has been asked for, and everybody will have to be cut. The greatest crush is perhaps in the Department of Manufactures; although the big building constructed for these exhibits is said to be the largest structure in the world it is still inadequate for the demands. France, Germany and England have, since they discovered the extent of the fair, almost doubled their original applications for space. France secured 100,000 square feet in the building, and has been making urgent appeals for 200,000 feet more.

Chief Allison of this department thinks he can eliminate a good many applications. With this purpose in view he has armed a young man with the rating book of a commercial agency, and told him to mark as worthless all applications from persons who have no commercial standing.

Director-General Davis does not want to begin too soon the issuance of space permits. The managers of the Philadelphia Centennial allotted no space until seven months before the exposition opened, and in his report Director-General Goshorn says it was most fortunate that the matter was postponed as late as it was. Applications were received up to a few days before the show opened, and it developed that among these late comers were some of the most important exhibits at the exposition. The World's Fair will open May 1, 1893, which, from August 1, will leave an intervening gap of nine months. Meanwhile there is no reason to believe from the records that more than two-thirds of the applications are now in. Philadelphia had in all about 30,000 exhibitors. Of this number 22,000 were foreign and 8000 domestic. At this time the applications received are far in excess of those received for the Centennial at a corresponding period.

Canada's Exhibit.

Canada will make a remarkable display of her mineral resources. The province of Ontario has determined on making a large exhibit of all the minerals found in that province, and Quebec has resolved not to be behind her sister province in this respect. Nova Scotia, so rich in mineral wealth, is also actively engaged in bringing together specimens of her richest deposits. It is expected that the gold ores of Nova Scotia will surprise many of the visitors to the World's Fair, while the samples from her coal fields will afford some idea of the wonderful resources of the province in that particular. The asbestos, mica, plumbago and phosphate deposits will form prominent features in the Quebec exhibit; while the rich nickel ores, for which Ontario is now so famous, will receive much attention from that province. The Dominion Geological Survey will make a very fine exhibit, which will afford facilities for studying the mineral resources of the country, on either the limited provincial basis or from the wider Dominion standpoint.

Miscellaneous.

One of the exhibits in Machinery Hall will be a novel paper mill. It will be in active operation and will show all the processes of paper making from the pulp to the finished card, which will be in the form of a World's Fair souvenir. Secretary Agnew of the Paper Trade Club of Chicago, accompanied by several leading manufacturers, have recently made arrangements with Chief Robinson for the exhibit.

The progress of shipbuilding from earliest times up to the present will be shown by a very extensive exhibit which will be made by Laird Bros., the big English shipbuilding firm at Birkenhead. The firm's exhibit of like character at the recent English naval exhibition attracted a great deal of attention.

The Westinghouse Company began work last week on their contract for furnishing incandescent lights by placing lamps in the Woman's Building. The designs were completed for the arc light posts, which will be reared throughout the grounds. They will number 1000 and will be eighteen feet high. One-third of the material for the electric light plant is already on the grounds.

The railways of the Argentine Republic have granted half-tariff rates on articles intended for exhibition and free passes to members and employees of the Argentine Commission when traveling on exhibition business.

New York will have one of the finest State buildings. It will be 90 feet wide by 200 feet long, and three stories high. Inclusive of donated material and decorations the structure will represent an expenditure of more than \$150,000.

Just back of the New York Building, in a depressed area, will be spread out flat an immense topographical map of that State. It will be 36 feet long and 26 wide, and will show the mountains, forests, rivers, towns and all of the great natural and artificial features of State scenery.

The State Commissioners on the 6th inst. awarded the contract for Minnesota's Building, including the roof of Spanish tile shingles, to Libbey & Libbey of Minneapolis for \$24,140.

The advocates of a ship canal between New York and the Delaware River are impatient that Congress makes no appropriation. The proposed route is but 33½ miles in length and but six locks would be required. The cost is estimated at \$12,000,000.

The Walker-Weston Clutch.

The six clutches made in accordance with the drawings here presented by the Walker Mfg. Company of Cleveland, Ohio, were for the main plant of the Cleveland Cable Railway Company. Fourteen, of 1000 horse-power each, have been made for the Third Avenue Railroad of New York. The operating mechanism for these clutches is very compact and powerful. Although the lever is only 9 feet long it is so arranged with pinion and hand wheel as to exert a power equal to a lever 54 feet long.

On the shaft A is keyed the sleeve B, formed with the flange *b*, which is in a plane at right angles to the axis of the shaft. The sleeve C is splined on the sleeve B and is provided with the flange *c*, which is parallel to the flange *b*. The sleeve C and its flange constitute the mov-

them and the brackets to which they are attached, whereby the wedges are moved further inward when the toggle is straightened.

The wedge E is adapted to be thrust inward toward the shaft between and in engagement with the beveled surfaces on the faces of the sleeve C and collar D, thereby causing the sleeve to move away from the collar and consequently toward the flange *b*. Each of the wedges is moved outward and inward between the sleeve C and collar D by means of a toggle. The inner link G (shown detached in Fig. 7) of the toggle is pivoted to the wedge E and the outer link G¹ is pivotally connected to one of the jaw pieces F. When the toggle is straightened the wedges are forced inward between the faces of the fixed collar D and movable sleeve C. The link G² connects the toggle joint

leaves the sleeve C free to be moved backward. A further movement of the sleeve brings it against the nut *m*¹, whereby, as the sleeve is still further moved, its movement is transmitted through the rod M to the sleeve C, which is thereby drawn positively backward. As many of these rods M and their nuts may be employed as desired, and the same statement may be made relative to the wedges and their operating toggles. The drawings show six systems of mechanisms for moving the sleeve C in both directions; but this number may be varied, as circumstances require.

In order to make the clutch as inexpensive and durable as possible the links G G¹ are both alike, as shown in Figs. 5 and 7. The ends of the links, which are connected together, are made as shown at the top of Fig. 7—that is, they have an extension *g* half as wide as the link, which

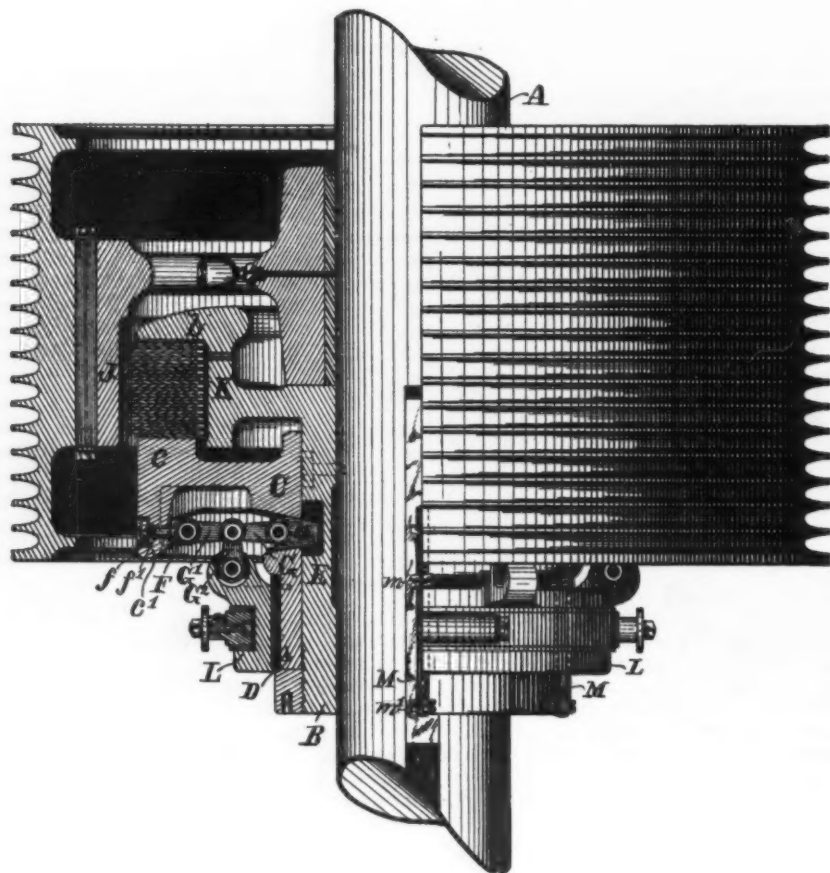


Fig. 1.—Side Elevation and Section on Line 1 1 of Fig. 2.

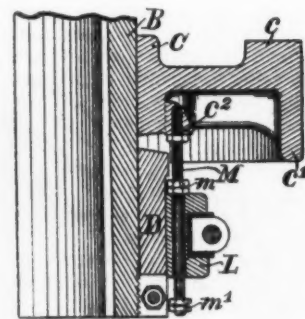


Fig. 3.—Section on Line 3 3 of Fig. 2.

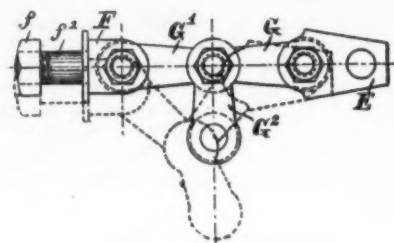


Fig. 4.—Enlarged View of Wedge and its Operating Toggle.

THE WALKER-WESTON CLUTCH.

able clutch member, and the flange *b* the fixed member. The movement of the flange *c* toward the flange *b* causes the interposed loose parts, which are here shown in the form of a series of disks, J K, to be grasped between them. A collar, D, surrounds the sleeve B and is held in a fixed relation to the sleeve (and consequently to the shaft) during the clutching and unclutching movements of the sleeve C. At suitable intervals the proximate faces of the collar D and sleeve C are provided with opposite beveled surfaces, against which the wedges E act. The bracket *c*¹ is rigid within the flange *c* and projects from it over the rear end of the sleeve C. There are as many of these brackets as there are wedges employed. There are several jaw pieces F, Figs. 1, 4 and 5, one of which is secured by means of the threaded stud *f*¹ and nut *f* to each of the brackets, and extends inward toward the axis of the shaft. These jaw pieces may be adjusted by the insertion of metallic packing between

with the longitudinally sliding sleeve L, whereby when the sleeve is moved in one direction its movement, transmitted through the link G², straightens the toggle, while its motion in the opposite direction bends the toggle, which thereby draws the wedge outward. The sleeve L, as shown, is mounted on the collar D, with which it is connected by means of a tongue and groove.

The means provided for positively moving the sleeve C and its flange *c* away from the flange *b* consists of the rods M, which slide through suitable orifices parallel with the axis of the shaft formed in the sliding sleeve L and which screw into a lug *c*² on the sleeve C.

The nuts *m*¹ are adjustable upon the rod M, lying on opposite sides of the sleeve L. In moving the sleeve L forward to straighten the toggle the nut *m* acts as a stop to limit this forward movement. When the sleeve is moved backward, it first bends the toggle, and thereby causes the withdrawal of the wedges, which

is finished in cylindrical form. The other half of the end of the link is finished with a concave cylindrical surface, *g*¹. The extension *g* on each link rests and operates against the concave surface *g*¹ on the other link. The opposite ends of the links are finished in cylindrical form and set between ears *e e* on the wedges E and between ears *f f* on the jaw piece F, respectively, and bear against concave cylindrical surfaces on said parts between said ears. The link G² is forked, as shown in Fig. 6, and the toggle joint lies between the two ears *g g*. The cylindrical ends of the links of G G¹ bear against a concave cylindrical surface *g*⁴ on the link G² between the ears *g g*. The three pivot bolts G⁴, which connect the toggle links with each other, with the link G², with the wedge E, and with the jaw piece F, are, by reason of this construction, of the same length, and while they serve to hold the parts in place they are not called upon to bear any of the strain incident to straightening the toggle joint.

The Illinois Steel Company's Position.

The following statement has been made to a representative of the press by Jay C. Morse, president of the Illinois Steel Company:

The Illinois Steel Company will have no trouble with their employees, no strike is imminent, and there is no friction whatever between company and men. We make contracts as to wages and minor conditions with our men through their union to run for one, two or three years. This is the practice with all steel and iron mills. Our South Chicago Steel and Rail Mills, where 4500 men are now employed, are running. Our wage contract there with the men does not expire until next year. At the Joliet Steel and Rail Mills, where 2000 men are now employed, the contract would not

these mills voluntarily reduced the wages of one class of their labor 33 per cent.

The Bay View Mills at Milwaukee, employing 1500 men, were closed because the wage contract expired July 1 and the men asked for two weeks of rest as a holiday in July. Such holidays are not unusual. During this shut down we can do the repairs for the year as well as adjust the wage scale. There has not been a word of trouble nor any friction between men and company at these mills.

At the Union Mills in Chicago 1800 men are all working. The contract is similar to that at South Chicago, in that it does not expire until next year. In the North Chicago Mills, where 800 men are employed, the three-years wage contract expired June 30. We closed these and expect to remain shut up for some weeks. The yards are full of material and repairs

was an increase in the prices of the ordinary necessities of life. The report of the founders and engine makers shows that out of 306 centers connected with this industry, in only two did the wages rise, while in 72 they fell, and in the rest remained stationary. The cost of living increased in every case. The depression manifested itself chiefly in the larger centers, such as Berlin, Breslau, Essen, Leipzig, &c. Returns from miners' associations were even less favorable.

San Francisco News.

One of the leading features in trade circles to-day is, of course, the fight that is being made by the Traffic Association to lower overland and local rates of freight. People asked each other, What, after all,

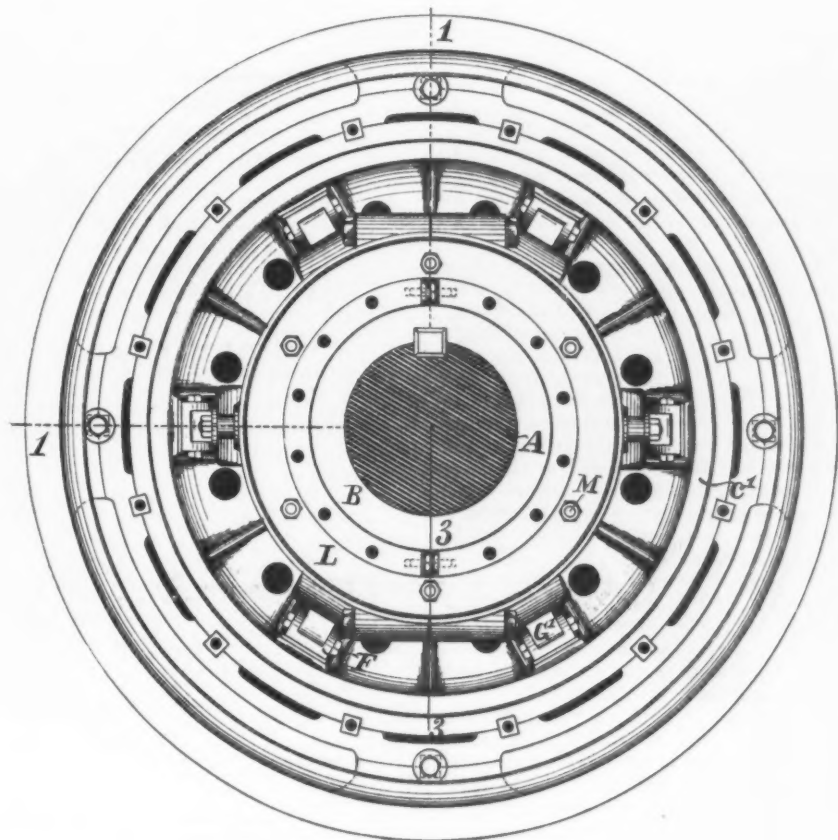


Fig. 2.—End View.

THE WALKER-WESTON CLUTCH.

have terminated unless they or we had given notice six months previous to December 31, 1892, of a desire to give an opportunity to readjust present conditions, if either the company or the men should desire to do so before the close of this year. We gave such notice. It may not be necessary to make any changes. Had this notice not been given the present contract would have run unchanged for another year.

The Joliet Rod Mills, employing 300 men, stopped July 1. There were three reasons for this. The contract with the men expired at that date, new machinery had to be put in and repairs made, and besides, a month's stock of rods had accumulated in the yards. We wanted to reduce this supply before making any more. While these changes and improvements in machinery are being made the matter of wages will be talked over and the scale fixed for the ensuing year or years. To show that there is the best of feeling between the company and their employees on the question of wages, I might call your attention to the fact that the employees in

have to be done. While the repairers are at work we will take up the question of wages.

Workmen at the furnaces, cokeries and mines are all working, satisfied and happy. The question of labor disturbances has not arisen in any of the Illinois Steel Company's properties. The company are growing prodigiously, and this is due largely to the fact that in all branches of the work labor receives fair treatment. It is dealt with as an equal, as one willing to concede and prompt to demand rights.

The condition of the laboring classes in Germany last year, as indicated by statistics gathered from trade associations, was not improved. The statistics are based on reports from 906 towns and 924 associations, including altogether 16 different branches of trade. In 229 of the towns mentioned the rates of wages were lowered during 1891, in 670 they remained unchanged, and only in seven cases there any rise recorded, although there

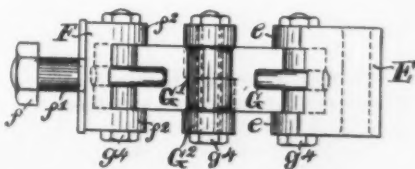
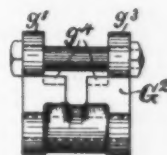
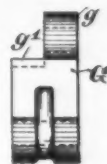


Fig. 5.—View of Under Side of Fig. 4.

Fig. 6.—Detached View of Link G₂.Fig. 7.—Detached View of Link G₁.

can the Traffic Association do unless it goes into the business of building or buying ships or constructing lines of railroad? The Southern Pacific held the only method of rail exit or entrance to the State, or, for the matter of that, may be said to control the lines of road all throughout the State. The Railroad Commissioners were supposed to be favorable to them. Any attempt to lower rates by means of non-sympathizing commissioners could be taken to the Supreme Court and held there for three years, not to speak of the chances of its making the acquaintance of the Federal judiciary through some technical point. There were no great signs of the association being in any special hurry to do any of these things. There were whispers here and there of special rates being made to particular firms—*divide et impera*. There was a general, though unspoken, desire that the association should do something to serve as a *raison d'être*. Well, they have done something, and the encouragement and assurances of patronage given by them

have started up two clipper lines in competition with those already existing and which have come to stay. We refer to the lines of J. W. Grace & Co. and Bal-four, Guthrie & Co. The first is, of course, the world-renowned firm of your city. The other is one of the leading commercial and shipping firms of this city and Liverpool. So you may be assured that there is a prospect of a very lively competition. This has given renewed life to the steamship line around the Horn which has been in operation for some time, but which did not show many signs of activity until recently. The *Mineola*, however, cleared the other day with a very large cargo. It is whispered that rates as low as \$4 per ton have been offered. Even a much higher rate would be an unspeakable boon to San Francisco merchants, especially to those engaged in the hardware and iron trades, as a high freight is felt more on them than on most articles of merchandise. It would lead to enormous shipments of these goods around the Horn, and in this would be to us a reminder of the olden days when everything for the coast came to San Francisco by water. This would make the railroad cut rates, but it could not afford to cut them so as to compete with water carriage. And now, indeed, whether we have competing roads or not, a goodly portion of this freightage is bound to be sea borne, and to go back to steamer and clipper, never to return.

The proprietors of the Fulton Iron Works have decided not to permanently rebuild on the old site, and as they have been offered several good ones outside the city they will accept of some one, but of which is not yet known. They have been offered fine sites at Baden—in the city—at Oakland, Alameda, Vallejo, Tiburon and Berkley. It is the intention of the company to greatly extend the facilities in regard to marine construction. When the calamity overtook them they were employing 300 men and paying \$30,000 per month.

The Southern Pacific are about to replace their 60-pound rails by 76-pound rails. This will make quite a demand upon Eastern mills for the needed rails, although not many years since, when the same company were using large quantities of rails, they were heavy importers of the English article.

There has been a lull in the importation of rails for a while, and the local market struggles along in competition with the Eastern article on stock here and at previous prices.

We have had another arrival of Eastern pig iron—244 tons by the A. J. Fuller. The market for pig is as dull as ever at \$23 to \$25 for the best American and English and Scotch makes. The stock of the latter is declining in default of importations. French iron, of which at intervals we used to import considerable, is now never seen in our market.

The demand for all descriptions of iron, hardware, &c., has fallen off recently. In the country most people are now looking after the harvest or the fruit crop, or both, and are not engaged in or thinking of making improvements. The city trade in building hardware, too, is light. Pipe is low. Agricultural implements are quiet.

There have been no imports of tin plate of late outside of an occasional box by rail. The market keeps quiet at a range of \$5.85 to \$6. There has been an advance in pig tin, which is now quotable at 24 cents per pound.

There have been no heavy importations by sea for the past two weeks.

Imports by rail have been lighter, too, and this will doubtless continue to be the case for a few weeks. For the past two weeks the movement aggregated 71 cars, including 11 of iron, 4 of pipe, 7 of stoves, 1 of agricultural implements, 7 of plates, 23 of machinery, 7 of hardware, 1 of rails,

1 of beams, 1 of safes, 1 of spelter, 1 of wire netting, 3 of wagons, 1 of rakes, 1 of vault, with 1 car column, 29,450 pounds of zinc, 200 kegs of nails.

Work on the new Pacific Mail Company's steamer *Peru* is progressing very rapidly, and she will be ready for sea in an uncommonly short space of time, and will add another to the fleet of vessels, both steam and sail, that are now competing so keenly in these waters.

The Foundrymen's Association.

The Foundrymen's Association held their fourteenth meeting at the Manufacturers' Club, Philadelphia, on Wednesday, June 6. There was a very fair attendance of members considering the season of the year, and much interest in the work of the association was evinced, a large proportion of those present taking part in the discussions on professional topics.

Secretary Howard Evans read a curtailed report of the Freight Committee on the result of inquiries instituted by them with the view to a comparison of freight rates on raw iron and castings to and from all points in this country, more particularly from East to West, and *vice versa*. A large amount of information on this head has been collected, and further data are awaited.

Mr. Evans spoke encouragingly of the prospects of the association, the membership of which has now reached over 80, and cordially acknowledged the sympathetic interest which it has awakened in the trade throughout this country and also in England, as evinced by numerous letters received by him since the previous meeting. These letters touch principally on the subjects proposed for discussion at the meetings, as well as on kindred points which the writers conceived to be of interest to foundrymen in general.

It had been expected that the meeting would be addressed by an authority on the subject of "Iron for Commercial Purposes," but the gentleman selected to deliver the address having been unavoidably prevented attending, the subject was postponed until the next session.

Discussion was held on "Impurities in Pig Iron," "The Advisability of Running Castings Direct from the Furnaces, through the Medium of a Reservoir," and other points of interest. The following gentlemen took the most prominent share in the proceedings: President Francis Schumann, Vice-President Thomas Devlin, and Walter Wood, Charles Holbrook, Howard Evans and George Rominger of Philadelphia, William R. Brittain of Wilmington, Del., and Robert J. Regester of Baltimore.

A subject brought before the meeting incidentally in the course of discussion, and which evoked considerable interest, was the relative value of coal and coke for fuel in foundry practice. Several opinions were given, but the balance appeared to be in favor of coke. Mr. Schumann stated in this connection that he would never use a pound of coal again in his cupolas, extended experience of both fuels having convinced him of the entire superiority of coke over anthracite in every respect.

It was decided to renew the discussion on "Impurities in Pig Iron" at the August meeting, when the interesting paper read by Stockton Bates at the June meeting, on the "Cost of Castings," will also be discussed, and it is hoped that the members will be able to supply valuable additional information on this subject, and by criticism and comment help to mutually enlighten each other on a point of so material an interest to all foundrymen.

The Wythe Lead & Zinc Mine Company of Austinville, Va., have recently added some improvements to their prop-

erty in the way of a stationary electric power plant (the first in Virginia), by which they drive a machine for pugging fire clay for making retorts and condensers, and a retort machine with capacity of 80 retorts per day. They have also recently put in operation a magnetic iron ore separator to separate the iron (brown hematite), which is rendered highly magnetic by a peculiar method of roasting. The capacity of the machine is 6 tons magnetized iron ore per day and 10 to 12 tons dressed zinc ore per day. After this separation the product of their spelter furnaces is increased fully 50 per cent. They are almost ready to put in operation a double iron ore washer with capacity of 40 to 50 tons per day of limonite iron ore, and may, in the near future, put in another washer to double this capacity. The machinery is all propelled by water power; no steam used except to drive the iron ore washer. They are also remodeling all of their lead furnaces and enlarging the same to work up a large stock of lead ore and slag which has been accumulating. They will in a short time be ready to put in operation their shot manufacturing works.

The Wire Rod Scale.

On Friday, the 8th inst., the Carnegie Steel Company, Limited, of Pittsburgh signed the Amalgamated Association scale for rod rolling for their Beaver Falls mills at Beaver Falls, Pa. The scale as signed by the firm is as follows:

Wire Rod Mills.

The following scale is for rolling wire rod from 4-inch billets to No. 5 wire gauge, 2240 pounds per ton. It is understood that finned or imperfectly rolled rods are not to be paid for.

Position.	Price per ton, 2240 pounds, cents.
Rolling.....	30
Roller's helper.....	9
Heating.....	36
Helping.....	13
Telegraphing.....	11
Rougher, 18-inch mill.....	10
Bull-dogger.....	7
Stick-in, 12-inch mill.....	7
Troughman.....	6
Finishing.....	10
Diamond.....	9
Square.....	7½
Oval and shear.....	8½
No. 1 hook.....	6
No. 2 hook.....	5½
Reeler.....	6 8-10

NOTES.

1. No double turn rod mill shall work more than 10 hours each turn, divided as follows: From 5 a.m. to 7 a.m.; from 7.45 to 12 noon; from 12.45 to 4.30 p.m., and not later than 2.30 p.m. on Saturday.

2. Any rod mill may work on the eight-hour plan upon agreement with the management, the hours to be divided as follows: First turn—Start Monday at 5 o'clock a.m. to 7 a.m.; from 7.30 to 11.45 a.m.; from 12.15 p.m. to 3 p.m. Second turn—From 3.30 to 7 p.m.; from 7.30 to 11 p.m. Third turn—From 11.30 p.m. to 3 a.m.; from 3.30 to 7 a.m.

3. That not less than an average day's wages be paid for all sizes larger than No. 1.

Steel vs. Iron Tubes.

At the Saratoga Convention of the Master Mechanics' Association a committee made the following report on steel vs. iron tubes: "The information as to the relative merits of steel and iron for boiler tubes has excited considerable discussion, but your committee has very little definite information to present. We are, however, advised that in the case of a large number of steel tubes the results, so far as wear is concerned, have been unfavorable. The following definite experiment, however, has been made: An engine was equipped with 114 iron tubes and 113 steel tubes on December 20, 1890. The iron tubes were placed on one side of the center and the steel tubes on the other side of the center

of the boiler, the tubes being divided by a vertical line through the center of the flue sheet. On March 9, 1892, the flues were all removed. Seventeen of the iron tubes were condemned on account of pitting and corrosion, while 64 of the steel tubes were condemned for the same defect. This would indicate that steel tubes are more affected by corrosion than iron ones. Further experiments and information in this line, however, are desirable in order to fully settle this question."

Sand-Pressing Molding Machine.

The James Reynolds Mfg. Company of New Haven, Conn., have recently remodeled and put on the market their sand pressing molding machine. Fig. 1 shows the machine with the platen and lever thrown back in position to receive the flask. Fig. 2 shows the flask on the machine, the platen in position, the lever drawn forward and the sand pressed into the

that Messrs. Cramp will be awarded the contract for the construction of four new ships for the International Navigation Company during the next few months. These vessels will probably be of similar dimensions to the City of Paris.

Foundry Mixtures.*

BY J. M. WARNER.

A more limited knowledge of the chemistry of iron, coupled with a better acquaintance of its physical characteristics, has resulted in very important changes in foundry mixtures in the past five years. These changes have been more important and radical in the West than in the East. Most of the large agricultural machine manufacturers, jobbing foundries, architectural works, &c., that five years ago were using largely of Nos. 1 and 2 foundry, with high-priced intensifiers, are now mak-

were 1 inch square and 24 inches between supports. All tests were made under the supervision of a competent civil engineer. The strongest bar broke at 1923 pounds. It contained Southern coke iron, Ohio coke iron, scrap and 1 per cent. of ferro aluminum; it was high mottled and too hard to work. The weakest broke at 840 pounds. It was made of a mixture of 50 per cent. each of old car wheels and No. 1 Lake Superior iron, a brand of high standing. These two irons were melted together on account of admitted high strength of each in order to secure very strong castings for special work.

The strongest bar from a pig-iron mixture without ferro aluminum was 1530 pounds. This was from an all-coke mixture in an Ohio agricultural shop in which only Southern and two Ohio brands and good scrap were used in equal proportions. The general average of all bars broken was 1120 pounds. In deflection, or bending capacity, the minimum was $\frac{1}{8}$ inch, the breaking strength being 1435 pounds. The minimum was $\frac{1}{4}$ inch, the breaking strength being 845 pounds.

A careful study of the data gathered from these and other experiments by Rogers, Brown & Co. seems to show that red short irons (namely, those low in phosphorus and in silicon, such, for example, as strong all Lake ore iron) when mixed together make castings weak, hard and given to shrinkage and blow holes. Cold short irons, or such as are high in phosphorus and silicon, when used alone tend to weakness and hardness. The highest results are had when different variety of these classes are mixed in proper proportions. These proportions should be such in ordinary foundry work that the resulting castings should run about 0.75 in phosphorus and pretty close to 2 per cent. in silicon. The safest mixture is one in which the two elements of Lake Superior ores and Alabama ores combine in the highest proportions. In this combination Nos. 2 and 3 grades may be used without making castings too hard. For example, for good machine castings, architectural work or general jobbing, a mixture of 30 per cent. No. 2 foundry and 30 per cent. No. 3 foundry standard Alabama iron with, say, 20 per cent. strong Lake ore No. 2 foundry and 20 per cent. scrap will give strength, smooth surface, hard lines, freedom from blow holes and softness for ordinary machine work. If greater softness is required, 10 per cent. of silicon iron, either Southern or Ohio, will accomplish the result. If little finishing is needed, the proportion of No. 3 foundry should be increased. A mixture of this kind intelligently made as to brands will give better results than would be had by the use of a strong No. 1 Northern coke iron with No. 1 imported Scotch as a softener.

Mill cinder, which is used to a greater or less extent in nearly all brands except those coming from the South, has a tendency to soften and fluidize the iron, but at the same time it renders it dirty and impairs strength.

The use of good scrap where it can be obtained lower than No. 3 strong pig iron, after making proper allowance for difference between gross and net tons, the difference in weight, is always recommended. It multiplies indefinitely the elements in a mixture. It must, however, be bought with care and watched in using on account of irregularity.

Silicon.—High silicon, or pure silvery iron, works advantageously in nearly all mixtures, the proper proportion varying from 5 per cent. to 15 per cent., according to the high or low silicon in other irons in the mixture. It is a singular fact that the use of an excess of silicon softener in a mixture produces much the same result as is encountered when there is too little. Just the right proportion will materially increase the strength of castings. A lit-



Fig. 1.

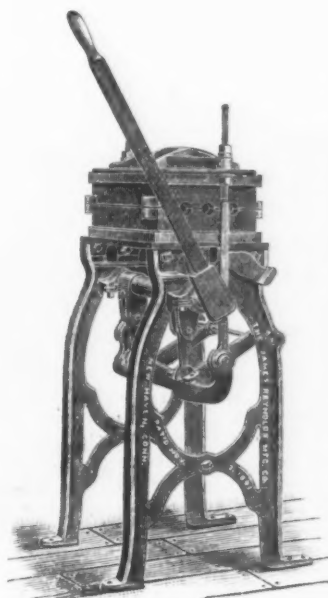


Fig. 2.

SAND-PRESSING MOLDING MACHINE.

flask. When the lever is drawn forward the downward movement of the platen is very rapid owing to the movement of the toggle arms and that of the swinging bail and ball-jointed sockets. According as the lever is drawn toward a finish, and the sand becomes denser the downward movement of the platen becomes slower without any diminution in the speed of the lever, and the pressure is increasing until at the finish the swing bail toggle arms and ball-jointed sockets are brought over their centers, at which time the pressure becomes enormous considering the small amount of exertion used. It is claimed that while this machine is light, it is strong and durable and capable of exerting the most powerful pressure. It cannot be injured by sand, as all the working parts are above the floor.

Cruiser No. 12, to be named the *Pirate*, which is under construction at H. W. Cramp & Son's shipyard, Philadelphia, will be ready for launching in August. She is an armored vessel, 412 feet in length and 58 feet in breadth, and is calculated to attain a speed of 21 knots an hour, with engines of 21,000 indicated horse-power. The *Pirate* will carry an armament of 11 heavy rifled guns, besides others of smaller caliber. It is expected

ing their entire mixture with No. 2 foundry, No. 3 foundry and gray forge and a little low grade high-silicon iron. The firm of Rogers, Brown & Co. about four years ago began an exhaustive series of experiments with foundry mixtures. The co-operation of leading melters of iron throughout the central West was invited and freely accorded. Precise mixtures were given (in confidence, of course), and accompanying these were test bars of uniform size. Something over 600 test bars were thus broken, representing about 150 distinct mixtures. The data were very carefully noted and the results have formed the basis of foundry practice recommended by that firm. Some of the largest melters of iron have readapted their mixtures with the advantage of securing a materially lower cost and a more uniform grade of castings. The old style of foundry practice that was dependent upon No. 1 foundry for certain favorite brands is practically a thing of the past, because the foundrymen retaining it cannot longer compete in prices in these days of fierce competition.

Noting in detail the results of some of these tests: The bars broken transversely

* An address before the Foundrymen's Association of Philadelphia.

tle too much renders them brittle and hard. An insufficient quantity will cause like results. Thus we often encounter the foundryman who has hard castings, and the more of his high silicon softener he puts in the harder and more brittle his castings become, with the result of quick condemnation of the softener.

In reference to the working of the chemical constituents of iron, a good deal has been settled in the last few years, and much of it is at variance with old traditions.

Phosphorus increases fluidity, but causes hardness and brittleness. Hence an excess of this element should not be allowed.

Sulphur hardens the metal; its action is powerful and is in almost a contrary direction to silicon, as it promotes the formation of combined carbon. One bar of sulphur will neutralize the effect of from five to ten bars of silicon, hence the metal should be kept as free from sulphur as possible. The best Southern irons and charcoal irons usually run very low in sulphur. Coke irons have never entered very largely into the malleable iron trade because of the difficulty of controlling this injurious element.

In speaking of sulphur, and in this connection we might say that about a year ago in furnishing a mixture for cast-iron-pipe work considerable trouble was experienced on account of shrinkage, causing breaking off of heads of pipe. This was attributed to the low phosphorus in the Lake ore iron the pipe works were using. The mixture was about half of the Lake ore No. 2 foundry and gray forge and the other half Southern No. 2 soft and gray forge. When any attempt was made to increase the proportion of mll iron the shrinkage was very troublesome. We thought this could be remedied by increasing the proportion of phosphorus in the mixture by introducing high-phosphorus irons, but this did not cure the difficulty. Apparently, the cause was closeness of grain. The problem is why a close iron should shrink more than an open iron. Professor Durham says that by using too much of the closer grades you get a percentage of sulphur which will have a tendency to harden the metal.

Speaking of the cast-iron-pipe industry, leads us to say that for real science in the union and melting of iron the pipe makers excel. They are confined on all sides. They have to make neutral castings or the heads of the pipe will pop off, and they have to make it out of the cheapest kinds of iron. In many cases the pipes are given very severe tests both in the pipe and test bars for transverse and tensile strength. The buyers for cast-iron pipe works know the chief characteristics of every iron offered to them, and while apparently they buy at random, picking up a cheap lot here and a cheap lot there, we find by careful inquiry that they are well supplied with some other iron fitted by nature to mix with the brand they buy.

In making mixtures for work that has to be enameled we have been careful to select irons that are as free as possible from sulphur. Castings for chemical works seem to stand the heat and the wear and tear of acids better when made from low-sulphur irons.

Manganese.—This tends to the formation of combined carbon in cast iron and reduces the tensile strength. It tends to make iron fluid, to remove shrinkage and make castings clean; it is usually thought that $\frac{1}{2}$ of 1 per cent. is about the limit, but the actual fact is that up to 1 per cent. it is a positive advantage for irons that carry a considerable amount of scrap. The famous Scotch irons run from $1\frac{1}{2}$ to 3 per cent. in manganese.

Carbon.—Combined carbon in cast iron increases its hardness and brittleness. Irons low in silicon generally contain combined carbon, and as the percentage in

silicon increases the carbon is forced into graphitic state. When the iron is cooled suddenly, as in the case of chills, here the carbon, not having had time to separate out as graphitic carbon, is contained in the combined form. It is difficult to get a chill on iron that contains 1 per cent. to 1.25 silicon. The carbon in iron containing less than 1.25 silicon is very sensitive to the least addition or decrease of silicon as to the proportions of combined and graphitic carbon in the resulting castings.

Graphitic carbon means softness, but an excess of it frequently leads to imperfections in the castings which take the form of blow holes with free graphite visible to the eye. Many foundrymen have encountered serious trouble of this nature from the use of too much No. 1 foundry.

Summing up, a foundryman in the Philadelphia market to-day need experience no difficulty in getting castings of uniform excellence without using any No. 1 foundry, or any of the favorite and high-priced brands. New brands are coming into the field that in excellence surpass the old favorites. Some of them are practically unknown and sell at low prices. Alabama irons of the best brands form an excellent basis of mixture. It is important, however, to know precisely what is used in the way of grade. The handling of these irons in the East has been loose and unbusiness-like, and injury to their reputation has resulted by unscrupulous shuffling of grades by agents and dealers. The best Southern furnaces grade their iron with care and uniformity. A mixture composed of Southern No. 2 foundry and No. 3 foundry, with a good Virginia No. 2 foundry, and a little silicon softener if required, can be adapted to almost any line of work and is as a rule economical.

If agreeable to you and if you will not consider me unappreciative of the honor conferred in allowing me to address this representative gathering of business men, we would vary from the subject by paying our respects to the great railway interest centering in this city. It is a fact that we frequently have iron hauled by teams from various sub stations in this city at cheaper rates than we can obtain from the railroads for switching from one road to the other. It was only a short time ago that a freight solicitor for one of the roads asked for some business coming from one of the Western furnaces. We told him that owing to the location of the furnace, his road could only be used in switching the cars to the buyers' siding, but that as we could haul the iron by wagon and save the buyer 15 cents we felt it our duty to do so. The agent complained very bitterly about it and said that the wagons were beating them out of a great deal of business. Almost at your very doors there is a little community that is chiefly noted for the large iron works located in said community. In figuring with said foundry on a season's supply of iron we noticed that the freight rates from most of our furnaces were 50 cents higher than the Philadelphia rates. We asked one of the freight officials why such discrimination should be made, and he said, Because our road is the only road that gets there. We told him to get out his geography and he would find that his road was not in the procession, and unless said place was put upon the same basis as Philadelphia, we would have to make use of the Atlantic Ocean and one of the mighty rivers at our command. The rate was immediately reduced. This was over a year ago, but we notice by new tariff rates just received that the rate has been advanced 24 cents above the Philadelphia basis. Some one will have to again remind that railroad about the river.

We want all the help that our friendly competitors and the iron consumers of this city can give us in seeing that the steamship and railway companies work hand in hand with all of us in whatever portends

to the general good of this manufacturing community. We do not want you to think from this article that we are interested financially in Southern furnace properties. The only money any of the officers of our company have invested in furnace property is invested in the North, where Pennsylvania fuel and limestone are used in connection with Lake ores. We feel keenly the competition of Southern irons, but we say to our Southern friends, come right along; if you can reach our markets and live on a freight rate of from \$2 to \$3 higher than our local furnaces pay, you are welcome, and by the laws which govern commerce you are entitled to a foothold.

The Sheet Scale Signers.

In addition to the firms who have signed the Amalgamated Association scale governing wages in rolling mills we give below a list of firms who will be governed by the sheet scale which was adopted at the meeting held in Pittsburgh on Wednesday evening, the 29th ult. The list of firms who will pay wages called for by the above scale and whose mills will continue in operation right along are as follows:

Apollo Iron & Steel Company, Pittsburgh, Pa.
P. H. Laufman & Co., Limited, Apollo, Pa.
Arethusa Iron Works, New Castle, Pa.
Canonsburg Steel & Iron Company, Canonsburg, Pa.
Chartiers Iron & Steel Company, Limited, Pittsburgh, Pa.
Kirkpatrick & Co., Limited, Pittsburgh, Pa.
Republic Iron Works, Pittsburgh, Pa.
Moorhead-McCleane Company, Pittsburgh, Pa.
United States Iron & Tin Plate Mfg. Company, Demmler, Pa.
Jennings Brothers & Co., Limited, Allegheny, Pa.
Whitaker Iron Company, Wheeling, W. Va.
Wheeling Iron & Nail Company, Wheeling, W. Va.
Etna Iron & Steel Company, Bridgeport, Ohio.
Britton Iron & Steel Company, Cleveland, Ohio.
The Britton Rolling Mill Company, Cleveland, Ohio.
Burgess Steel & Iron Works, Portsmouth, Ohio.
Cambridge Iron & Steel Company, Cambridge, Ohio.
Cincinnati Rolling Mill Company, Cincinnati, Ohio.
Falcon Iron & Nail Company, Niles, Ohio.
Wallace, Banfield & Co., Limited, Irondale, Ohio.
The Eagle Iron & Steel Company, Iron-ton, Ohio.
New Philadelphia Iron and Steel Company, New Philadelphia, Ohio.
The Piqua Rolling Mill Company, Piqua, Ohio.
Reeves Rolling Mill Company, Canal Dover, Ohio.
The Standard Iron Company, Bridgeport, Ohio.
Summers Brothers & Co., Struthers, Ohio.
The Irondale Steel & Iron Company, Anderson, Ind.
The Midland Steel Company, Muncie, Ind.
New Albany Rail Mill Company, New Albany, Ind.
St. Louis Stamping Company, St. Louis, Mo.

On account of the increasing revenues of the Suez Canal Company, the tolls after January 1 will be reduced from 10 to 9 francs per ton.

A New Journal Box.

It is surprising how frequently valuable mechanical ideas of so simple a character that any one ought to be able to observe them are completely overlooked. The journal box herewith illustrated is a specimen of the value of little things, and is a still more striking exposition of the fact that a mere transposition of parts will sometimes revolutionize a device. In that class of journal boxes known as self adjusting or ball and socket boxes it has been customary to provide the lower half box with a pendent steady pin to prevent the box from revolving in its housing. It is necessary to remove this lower half box occasionally for examination, rebabbiting, &c., and this steady pin makes such removal impossible until the whole shaft is bodily raised high enough to let the lower half box clear of the housings. This is no small job at any time, and is entirely obviated by so small a transposition as the shifting of the steady pin to the upper half box. Then when the cap and upper half box are removed, and the shaft jacked up just sufficient to support it, the lower

take such prompt action as will result in placing upon the free list without delay (and permit their importation without obligation to pay any tariff taxes whatever) all articles, the manufacture, price, sale or distribution of which is or may come under the control or direction of any trust, association or combination whatever. Representative Reyburn of Pennsylvania (a member of the sub-committee) dissents from the above report.

The Suez Canal and Russian vs. American Petroleum.

The recent admission of tank steamships to the Suez Canal is conceived in the interests of the Russian oil trade; therefore a report from the English Consul at Batoum is especially interesting in this connection.

Before giving data from it, however, a word or two with reference to the admission of bulk petroleum steamers to the Suez Canal is in order. The new traffic is attended with two grave risks, heretofore considered of such importance that until

Now let us see what the trade was last year first in Russian petroleum and then in United States petroleum. Batoum, the oil port of Russia, is a seaport town of Asiatic Russia, on the eastern shore of the Black Sea, and depends for its commercial prosperity upon the amount of oil brought down from Baku for shipment. Baku is a port on the western shore of the Caspian Sea, and is connected with Batoum by a railway some 500 miles long, over which the petroleum is transported.

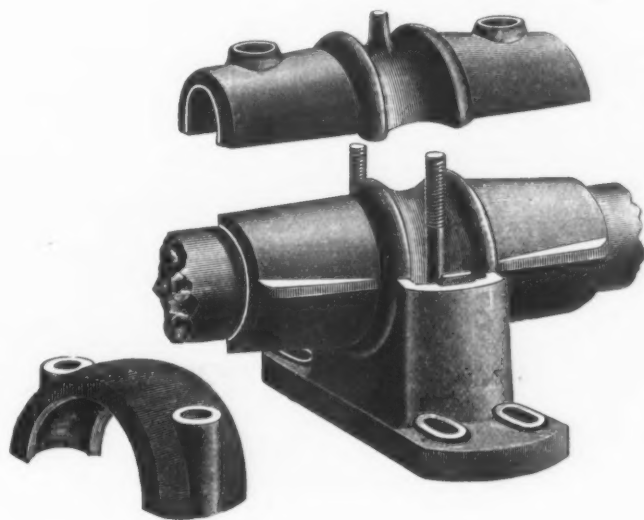
Last year, the report states, 32 tank steamers went to Batoum, of which 25 were English, 3 Russian, 3 Belgian and 1 German. They made 209 visits and took away in all 244,614 tons of petroleum. On the other hand, no less than 362,426 tons of oil were exported in cases. This gives a total of 607,040 tons. It is evident from these figures that, as matters now stand, the case trade is considerably greater than the tank trade, but the tank steamers are so economical that their employment for the trade with the East, now that the Suez Canal is opened to them, must eventually overcome all opposition. This needs little demonstration when it is stated that each case which contains 8 gallons involves an expense of something like 5 cents per gallon. As regards carrying capacity, 51 cases, or 408 gallons, are taken per registered ton, while in tanks 500 gallons per registered ton can be carried. Practically, therefore, the tank steamer takes 25 per cent. more oil, and avoids besides the cost of the cases. In the case of the storage of barrels this increase, according to the data given before, would amount to nearly 50 per cent. in favor of the tank ship.

The one great competitor of the United States in the production and exportation of petroleum is Russia, with her oil mills at Baku. Last year the total amount of crude oil produced at Baku was 4,670,000 tons. Of this, over 4,000,000 tons were piped to the refineries, where 1,175,000 tons of refined oil were produced. Of this amount 745,000 tons went to Batoum, the remainder went to Russia via the Caspian. Of the quantity sent to Batoum, 82,000 tons went to Russian Black Sea ports, while 607,040 tons were distributed as follows by case and tank ship:

	Tons.		Tons.
England.....	127,011	Roumania.....	5,149
India.....	132,591	Bulgaria.....	3,716
Turkey.....	100,746	Servia.....	359
Austria.....	29,253	Holland.....	5,536
Germany.....	2,259	Ma'ta.....	3,233
Belgium.....	45,739	China.....	44,482
France.....	3,042	Japan.....	23,675
Italy.....	35,772	Batavia.....	44,477

It will be seen from the above figures that India is the largest foreign customer of the Russian petroleum, with England not far behind her. It is also observable that a great deal of refined oil is shipped to China, Japan and Batavia, Java. As the production and demand now stand, some 250,000 tons of petroleum, roughly speaking, would find their natural course through the Suez Canal, and it may be premised that this represents probably the extent to which the opening of that waterway to tank vessels would benefit this particular type of cargo steamer.

It should be borne in mind, however, that the Russian oil trade has been developed within a comparatively recent period, and that it has probably a great future before it. The likelihood is that the exports to the East via the canal will tend to increase considerably, especially as there is no indication at present of any decline in the output at Baku. It behooves shippers of petroleum in the United States to keep a watchful eye on this Russian trade. Already serious inroads have been made on American refined oils, and the outlook is that the United States petroleum exports, which a few years back controlled the world, will be compelled to occupy a second place.



A NEW JOURNAL BOX.

half box can be rotated on the shaft from the lower to the upper side and lifted off. The cut shows the lower half box when half way in its passage from the lower to the upper side.

This improvement has been patented in the United States and England, and is manufactured by the Dodge Mfg. Company of Mishawaka, Ind.

A Report on Trusts.

Representatives Harter, Beeman and Williams (North Carolina), a majority of the Trusts Sub committee of the House Manufacturers' Committee, have made a report of the full committee. The report says that the sub-committee finds trusts, combinations and associations in control of the production, distribution and prices of very many of the most important articles of general consumption in the United States. The consequences are wholly bad and absolutely without any redeeming feature whatever. Prices to the consumer are increased, while the wages and occupation of those persons employed by the trusts are rendered less remunerative. Condemning all past and existing legislation in regard to trusts as insufficient and impracticable, the sub-committee recommends and requests the full committee to petition the House of Representatives to

now no steamer carrying bulk petroleum has ever been allowed in this canal, with its narrow banks, its crowded shipping and its high temperature at certain seasons of the year. There is, 1, the danger of fire or explosion on board the tank steamer itself, if she have her tanks full or if they have been ineffectually cleaned; 2, there is the risk of the escape of petroleum from the ship through leakage, collision or grounding.

The present fleet of tank steamers is not one of very great numbers, comprising only about 100 all told, and of these about 30 are used in the Russian trade; the rest carry oil from New York and Philadelphia to the ports of Europe. The advantages of carrying oil in bulk over the more common way of transporting it in barrels and cases are very great. On this subject Mr. Martell, the chief surveyor of Lloyds and an unquestioned authority on the subject, says, if a steam vessel that could carry 2000 tons of cargo, occupying as a limit 50 cubic feet to the ton, were filled with petroleum in barrels, she would carry only 1250 tons dead weight. But about 16 per cent. would represent the tare of the casks, thus reducing the actual amount of petroleum to 1050 tons. From this again it is usual to deduct 2 per cent. for leakage, which reduces the net weight of oil to about 1030 tons, as against 2000 tons of ordinary dead weight cargo.

Cheap carriage by land and sea is absolutely essential to success, and the Russians have been wise enough to see this.

The petroleum products of the United States are shipped in barrels and cases and also in tank steamers. There are at this writing some 70 steamers engaged in transporting oil, principally from New York and Philadelphia to several of the ports of Europe. The main ports in England where tank steamers discharge are London, Liverpool, Hull, and Sunderland, these being the only places where large tanks are provided for the storing of the oil. Amsterdam and Rotterdam are the Dutch ports, Antwerp the Belgian, and Havre Cete, Marseilles and Bordeaux the French ports.

These steamers, flying the English, Belgian and German flags, are nearly all chartered by the Standard Oil Company, and it is estimated that they carry something like 5,000,000 barrels of oil yearly.

From the Treasury Department's Reports on Foreign Commerce, &c., the following figures of the export of mineral illuminating oil are abstracted. The data in the book give the number of gallons of oil exported, but, in order to compare the United States trade with that of Batoum, this has been reduced to tons, allowing 250 gallons of oil to weigh 1 ton. The total amount exported for the year ending June 30, 1891, was 2,284,478 tons, valued at \$40,221,201.

The quantity of American oil exported to the foreign countries which also received Russian oil was as tabulated below:

	Tons.		Tons.
England.....	324,104	France.....	15,058
India.....	158,638	Italy.....	83,822
Turkey.....	1,580	Holland.....	219, 16
Austria.....	2,868	China.....	108,642
Germany.....	648,748	Japan.....	124,002
Belgium.....	129,588	Batavia.....	86,532

The only countries to which the United States did not export petroleum were Roumania, Bulgaria, Servia, Malta, Bolivia and Russia. The amount retained for home consumption was about 4,000,000 tons.

Of the oil transported to countries other than Europe, the bulk went in sailing ships, put up in barrels or in cases.

Not a gallon went through the Suez Canal. Indeed, during last year but a single American ship passed through the canal, and she was a man of war.

A final word concerning the Baku wells. There 315 producing wells, yielding as much oil as can possibly be handled. The outlook is yet more promising this year than last, the first two months showing an increased shipment of nearly 50 per cent. over the corresponding period of 1891.

Producers and exporters of petroleum have here before them official facts. It remains for them to adjust rates so as to crowd out their competitors.

In addition to the firms mentioned elsewhere in this issue as having signed the various scales of the Amalgamated Association, the Moorhead-McCleane Company, operating the Soho Iron and Steel Works, at Pittsburgh, in addition to signing the sheet scale in conference, have also signed the Amalgamated Association steel scale for their open-hearth steel department. This scale, as signed by the firm, is as follows:

The following rate of wages is agreed upon for the year ending June 30, 1893, between the firm of Moorhead-McCleane Company of Pittsburgh, Pa., and the Amalgamated Association of Iron and Steel Workers:

OPEN-HEARTH FURNACES.		Per day.
One melter for each furnace.....		\$5.00
One first helper for each furnace.....		3.00
One second helper for each furnace.....		2.25
Three chargers for each furnace, each.....		1.90
One pull-up for each furnace.....		.75
WAGES FOR PIT HANDS.		Per day.
One ladleman for each furnace.....		\$2.25
One first pitman for each furnace.....		2.25
Two helpers for each furnace.....		1.75
One bottom maker for each furnace.....		2.00
One crane-man's helper.....		1.55

Fourteen heats on Nos. 1 and 2 furnaces to constitute a week's work, and all over to be paid pro rata.

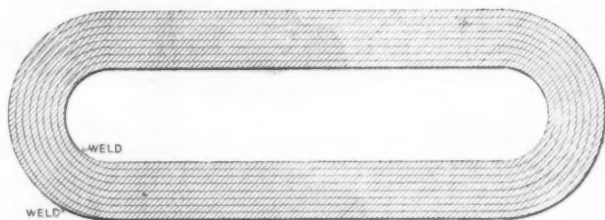
The above firm agrees to pay wages for rolling-mill department as called for by the proposed Amalgamated Association scale for 1892-93 until the scale governing wages in rolling mills has been finally adopted. Any concessions that may be made will be allowed to the firm.

The Baker Car-Coupling Link.

The Baker link, as shown clearly in the cuts, is made from refined iron, rolled into a band measuring about $1\frac{1}{4}$ by $\frac{3}{8}$ inches. The band is welded on a spool from end to end and afterward pressed into the elliptical section. Numerous tests of these links show them to be much stronger than the ordinary form. The advantages are: Uniformity of strength in every part by elimination of the butt weld, and reduction of crystallization to a minimum by the use of small sized iron. These links are made by the Allentown Rolling



Cross Section.



Section on A B.

THE BAKER CAR-COUPPING LINK.

Mills of Allentown, Pa., and are placed on the market by Edward Corning & Co. of New York, Philadelphia and Boston.

The Wire Drawers' Scale.

In addition to signing the Amalgamated Association scale governing wages to be paid in rod mills, the Carnegie Steel Company, Limited, of Pittsburgh and the Oliver & Roberts Wire Company of Pittsburgh have signed the wire drawers' scale for 1892-93. The scale as signed by the above two firms is as follows:

No. of Holes.	No. of Blocks.	Sizes.	Price per 100 pounds.
1	1	All sizes, including No. 6	Cts. 47½
1	1	4 or 5 rods to Nos. 7 and 8	5
1	1	5 rods to Nos. 8½ and 9	5½
1	1	4 or 5 rods to No. 9	8
1	1	4 rods to No. 9½	8½
1	1	5 rods to No. 9½	8½
1	1	5 rods to No. 10	8½
1	1	5 rods to No. 10½	9
1	1	Hard wire to Nos. 10 and 10½	9
1	1	Hard wire to No. 11	9½
1	1	Soft wire to Nos. 10, 10½, 11	8½
1	1	4 or 5 rods to No. 9	7½
1	1	4 or 5 rods to No. 9½	8
1	1	5 rods to Nos. 10 and 10½	8½
1	1	5 or 6 rods to No. 11	9½
1	1	5 rods to Nos. 12 and 12½	14
1	1	5 or 6 rods to No. 13	16
1	1	Hard wire to No. 12	9½
1	1	Hard wire to No. 12½	10
1	1	Soft wire to Nos. 12 and 12½	10
1	1	Hard or soft wire to No. 13	12

NOTES.

1. Any sizes that have to be drawn not mentioned in the above scale the price for drawing same shall be settled satisfactorily before starting on the same.

2. When 8½ and 9 is drawn only, the price shall be 5½ cents per 100 pounds, but when 8½, 9 and 9½ is drawn from the same rod on one block, the price shall be 6 cents per 100 pounds.

3. All rods not pointed shall be ½ cent extra on above prices.

4. No. 4 rods, three holes to 10½, giving first hole on ripping bench, 4½ cents; same wire taken from ripping bench and giving it two holes to 10 or 10½, without annealing, 9½ cents.

6. The company shall furnish not less than four convenient battering stands for wire drawers.

6. That the same size gauge be adopted that is at present in use at Salem, Findley, New Castle and Anderson, better known as the Salem Wire Nail Gauge, to govern all wire drawers.

The Carnegie Steel Company, Limited, up to this time have signed the Amalgamated scale for their Upper and Lower

Union mills at Pittsburgh, and for the wire rod and wire drawing departments of the Beaver Falls mills at Beaver Falls, Pa.

Contracts of Common Carriers.

The House Committee on Interstate and Foreign Commerce ordered a favorable report on the House bill making it unlawful for any common carrier, either by land or water, to insert in any bill of lading or shipping document any clause or agreement whereby the carrier shall be relieved from liability for loss or damage arising from negligence or failure in proper loading of any merchandise or property committed to its charge, nor shall it be lawful to limit its liability to less than a full indemnity to the claimant for any loss or damage incurred. The bill further provides that it shall not be lawful to insert in the bill of lading of any vessel plying between the United States and foreign countries any agreement whereby the obligations of the owner of the vessel properly to equip the ship shall in any wise be lessened. The bill relieves the owners of vessels, however, of all responsibility for damage or loss to merchandise resulting from error of judgment in navigation or management of the vessel, if it is shown the vessel was in all respects seaworthy and properly manned and equipped in starting on her voyage.

C. Holland, the Pittsburgh representative of Naylor & Co., has returned from Europe.

THE WEEK.

The railroads in New York are rapidly depriving the canals of their share in the transportation of grain from Buffalo to the seaboard, and this despite low canal tolls and increased receipts at the lake ports. The railroads are prosecuting a war of rates in hope of abolishing all competition in future years. The canal rate during June for wheat varied little from 2½ cents per bushel.

Rails are being laid rapidly on the Montana extension of the Burlington & Quincy Railroad, which, it is predicted, will be in the Yellowstone Valley by January 1 and in Helena during the coming year.

A ship canal to connect Puget Sound with Lake Washington is earnestly advocated by the citizens of Seattle. The plan, if carried into effect, would make accessible an interior lake of fresh water suitable as a rendezvous for naval vessels of iron or steel, and more than 60 miles of water front would be added to the harbor of Seattle. The expenditure contemplated is about \$3,500,000.

To keep pace with the rapid development of the German ocean carrying trade important works have been undertaken along the coast of the North Sea and the Baltic. Bremen, to secure easy access to the Kaiser dock at Bremerhaven, is about to construct a lock which will be the largest undertaking of the kind on record. This lock will be 200 meters long, 25 meters broad and 10.30 deep. It will cost, according to present estimates, 18,000,000 marks. Hamburg, Stettin and Konigsberg also have important schemes under consideration.

The Imperial Railroad in China, the only railroad in that country, is said to be in operation for a distance of 120 miles, and the general manager is said to be Mr. Petchick, an American, who is soon to be joined by two other railroad men from Ohio. Next spring a master mechanic, a bridge builder and a civil engineer will follow. The two Ohio men will be the first Americans to run locomotives in China.

Chinese coins made at the Imperial mint in Canton are driving out from use in the commerce of Hong Kong the English colonial coins, and of late the mint is turning out a sufficient quantity of silver to maintain the customs service. China is supposed to be imitating the financial policy of Japan.

According to the New York Assessor's valuation the total real and personal estate in this city for 1891 was \$1,785,857,338 and for 1892, \$1,828,264,275. The total increase of assessed valuation for this year is \$42,406,937. The real estate valuation increase in 1891 over 1890 was \$65,957,813, and the increase this year is \$40,656,738.

Prospects are said to be good for an early completion of the Union Pacific Railroad from Portland to Puget Sound.

A through line for traffic between Tampico and the city of Mexico is supposed to be in the early future.

Fluctuation in the silver market is seriously disturbing the silk and tea trade in China.

The London Board of Trade returns for June show that the imports decreased £4,640,000 and the exports decreased £3,360,000, as compared with those of the corresponding month last year.

Contrary to the promises usually held out in the organization of trusts, that increased profits were to be derived from economies introduced rather than from any advance in prices, on inquiry into actual results shows that almost universally

an advance is made whenever the business is sufficiently consolidated to warrant such a course. The principal reason is that so many decrepit or otherwise unprofitable concerns are necessarily closed and withdrawn from competition.

The once powerful English frigate *Shah*, built as late as 1876 at a cost of \$1,150,000, has been converted into a depot hulk for service at Bermuda.

It is charged that the newly-built English cruisers so often fail to realize the speed contracted for because the money for their construction is paid over before any proof of their efficiency is obtained by actual steam trials, which is entirely contrary to the American practice.

It is said that binder twine to the value of \$12,000,000 was made and sold in the United States last year. Cheap twine-making machines have done much to supersede the use of wire in binding grain.

The numerical growth of mercantile exchanges in the United States during the last decade appears from the single fact that 1241 of these organizations were supplied with telephone service in 1890, an increase of 804 as compared with 1880. Meanwhile, however, the amount of money invested in telephone lines has nearly quadrupled.

In the Argentine Republic the premium on gold is decreasing, and foreign trade for the first four months of the year shows great improvement over that of the corresponding period for the last year.

The competition of the new clipper lines to California and the steamship lines is having the effect of lowering rates very greatly and of stimulating trade.

A scheme that thus far is only talked about is the organization in Ohio of the Great Lake Steamship Company, to build a couple of passenger boats costing not less than \$400,000 each, to run direct between Duluth and Buffalo, with a guaranteed speed of 19 miles an hour. It is thought that the Globe Iron Works will get the contract.

Silver currency is not popular in Austria. Since the time when the silver and paper florins were on a par there has been a tendency to object to receiving more than one of the coins at a time, and at the present time "no tradesman dare give change for five florins in silver without begging his customer's pardon." So a Vienna letter says, and in the United States the silver dollar is frequently offered with an apology.

The Brazilian Minister of Finance says the reciprocity agreement with the United States is very unpopular. A revision will be asked for.

New Yorkers were recently surprised to learn that the control of the Union Pacific Railroad was held in Europe. It is not unlikely that other of our important railroad properties are similarly owned. Therefore, if Europe is poor in consequence of bad crops, it is not strange that American securities are being returned in exchange for gold.

As many as 100 steamships may frequently be seen in New York harbor at one time.

The need of coaling stations at convenient distances along the coast is pressing upon the attention of American naval authorities. Captain Mahan of the War College near Newport, says: "It would be amusing, were it not painful, to see our eagerness to have fast ships and our indifference to supply them with coal. What neutral power will sell us coal when engaged in war with a more powerful maritime State, and what is a commerce destroyer without coal?"

The Reading sea-going fleet engaged in coal transportation consists of 10 steam colliers, 24 barges and two tugs, the largest of them varying from 1000 to 1700 tons, with headquarters at Port Richmond.

McBride Brothers' famous steam launch *Yankee Doodle* on the 4th inst. gave an exhibition of speed on the Schuylkill River. The trial was made over the last mile of the course, and was accomplished in the remarkable time of 2 minutes 13 seconds, and is claimed to be the fastest time ever made by a steamboat in this country.

Pennsylvania probably surpasses all other States, certainly all upon which reports were made last year, in the extent and expense of her riot duty since the Civil War. In 1875 she had out 1800 men, from April 4 to May 18, at a cost to the State of \$110,000; in 1877 she had out 9453 men, between July 19 and November 15, at a cost of \$710,000; while last year there were 900 men out, between April 2 and May 26, at a cost of \$35,030. In 1875 and 1891 the occasions were mining troubles; in 1877 the great railroad riots occurred, to which mining disturbances were added.

Two recent disasters to iron steamships must go on the record. The *Inman* cruiser *City of Chicago* went on the rocks on the Irish coast and soon after broke in two amidships during a gale, but not until all the passengers and a considerable part of the cargo were saved. Another Transatlantic steamship, the *Maréchal Canrobert*, built in Greenock, was sunk in collision with the French ironclad *Hoche*, which cut her in halves while obscured by the dense smoke caused by the firing of guns. Seven passengers were crushed by the contact.

The next crop of Louisiana sugar promises to be much larger than the last.

Charles Tupper, the Colonial Secretary, asks the English Government to place a duty of 50 cents a quarter on American grain, and admit Canadian wheat free.

In the case of the *Oil City* disaster, which caused the loss of many lives, the coroner's jury find that it was due to the negligence on the part of owners of oil tanks, which became undermined by the action of the water, allowing the contents to escape. Subsequently fire and explosion took place, destroying life and property.

The Chicago, Rock Island & Pacific Railway Company have issued a new tariff from Chicago and common points to Denver and common points, going into effect July 22, in which occur the following rates, in carloads, per 100 pounds.

	Car loads, per 100 lb. Cents.
Agricultural implements.....	85
Boiler flues.....	62½
Boiler tubes.....	52½
Bridge material.....	65
Cable railway yokes.....	45
Iron or steel bars, &c.....	65
Iron or steel scrap.....	35
Lead bar, pipe, &c.....	70
Lead, pig.....	47½
Pipe, cast iron.....	52½
Pipe, wrought iron.....	62½
Sash weights, iron.....	45
Spelter.....	53
Tin plate.....	46
Wire, staples, nails and spikes.....	70
Zinc.....	68
Pig iron, per ton of 2240 pounds.....	\$6.45

The same company are also distributing a new edition of their miniature reprint of the Western classification.

Arthur Savage of Utica, N. Y., has invented a military rifle that, it is claimed, will fire 60 shots a minute and carry a ball accurately for 2 miles. It will be tested by Government officials in the near future.

The Iron Age

New York, Thursday, July 14, 1892.

DAVID WILLIAMS, - - - PUBLISHER AND PROPRIETOR.
 CHAR. KIRCHHOFF, - - - EDITOR.
 GEO. W. COPE, - - - ASSOCIATE EDITOR, CHICAGO.
 RICHARD R. WILLIAMS, - - - HARDWARE EDITOR.
 JOHN S. KING, - - - BUSINESS MANAGER.

The Homestead Trouble.

Now that the fog of prejudice, ignorance and demagogism is gradually lifting, a fairer view of the Homestead trouble is obtained. It is beginning to be generally understood that less than 10 per cent. of the Homestead steel workers were affected by the proposed reduction and that they were all high-priced men, whose earnings had been steadily increasing since the scale of 1889, owing to improvements in machinery. The public is beginning to understand that when the \$25 minimum for billets was established in 1889, no one in the trade believed it possible that steel would decline to \$22.25, a price at which very large quantities were sold. The lowering to \$22 as the basis by the Carnegie Steel Company was a recognition of this fact, and their acceptance as a concession of the \$23 rate was probably dictated by the consideration, which the trade will share, that sales below \$23 are likely only under exceptional circumstances. The third point at issue was the time of expiration of the scale, the Carnegie Company desiring to get away from the general discussion of the wages question in summer. The justice of the demands of the Carnegie Company, so far as the question of wages is concerned, is proven by the statement of the officials of the Amalgamated Association that they were willing to sign the scale as presented, provided the time of its expiration be made to conform to the general practice. This fact should put an end to all the twaddle about "the greed of the manufacturers," all the frantic efforts to make political capital out of the contest, and all the absurd attempts to couple it with the tariff. H. C. Frick gave the Amalgamated Association the opportunity to accede to demands for a reduction of wages of a number of high-priced men, with the ultimatum that the works be made non-union. The whole struggle today is over the question whether or not the Homestead mill shall be non-union. This explains why nine-tenths of the men, who have nothing to lose, so far as earnings go by, the terms of the company, are not only not passive, but violently aggressive. Had they refrained from lawlessness public sympathy might have been with them.

A good many well-meaning people have sided with the men because the Carnegie Steel Company availed themselves of the Pinkerton service to recover possession of their property. It has been urged that the company did not exhaust the resources of the lawful authorities before they took that step. We believe that the history of

the past week has fully justified H. C. Frick. The country has had for days the mournful spectacle of seeing the Sheriff of Allegheny County affirming that he could do nothing, and the Governor of the State reiterating that the Sheriff must do all in his power, the final result being that the Governor did what he ought to have vigorously undertaken at once.

We hold that the responsibility for the disasters of the past week does not rest with the Carnegie Company, but with the wretchedly inadequate means available under the present system of local government to put a stop to local lawlessness. Until the owners of industrial property can feel convinced that their plants will be fully protected, they have the right, and it is their duty, to protect themselves, as it is the right of the private citizen to meet a burglar with weapon in hand.

To say that a manufacturer should be content to throw himself upon the local authorities, who are responsible, is absurd. They may recoup him for what property has been destroyed, but they will never pay him for lost interest, lessened profits or a weakened hold upon his customers. The managers of the Carnegie Steel Company have had experience with the protection accorded to them by the civil authorities. They acted in accordance with the teachings of that experience, and the event has shown unmistakably that their judgment was correct. The only mistake which was made was that the number of watchmen was not large enough.

Now, at last, the plant is again in their hands, and there can be no doubt whatever that it will be operated by non union men.

The Movement of Gold.

Apprehensions respecting the stability of the currency system are excited anew at the present time by the coincidence of several events. These are (1) the low state of the Treasury, as indicated by the reference to the Judiciary Committee for decision of a question respecting the legal necessity of maintaining intact the one hundred million gold reserve; (2) the present struggle in Congress over free silver coinage; (3) the large exports of gold made necessary by the return from Europe of American securities heretofore held as a profitable investment.

The reduced stock of gold in the Treasury vaults would alone suffice to awaken solicitude respecting the depletion by gold exports, amounting to nearly \$40,000,000 net since January 1, were it not for palliating circumstances. Occurring simultaneously is the renewed advocacy of free silver coinage, and at a time when the repeal of the present coinage law would seem to be a more appropriate subject for consideration. It is not surprising that bankers are prone to inquire, "Whither are we drifting?" Inquiry is all the more natural and pertinent when the fact is observed that the large European governments are all accumulating gold to an un-

wonted extent. It is observed, furthermore, that while the process of gold depletion is going on in the American Treasury, the paper money supposed to be convertible into gold is steadily augmenting in volume, so that while the superstructure is becoming more ponderous, the basis of support is being taken away. The present net stock, it appears, is only about \$14,000,000 of free gold—i. e., outside of the gold redemption fund. It is some satisfaction to know that in the national and State banks, meanwhile, the holdings of gold were correspondingly increased, and being still available for the uses of commerce, the Government cannot be at a loss in the use of methods for replenishing its gold reserve, should an exigency arise. So the condition of the Treasury need occasion no special solicitude. Another ground of assurance is found in the evidence now accumulating that gold imports must soon be resumed, the rates for sterling exchange having already fallen, in prospect of heavy exports of new crop wheat and cotton. Merchandise exported during the present year, as appears from statistics just made public, shows an excess of \$211,000,000, an amount that augurs a return flow of gold of no mean proportions; and shortly, when the outward movement of crops begin, the balance of trade in our favor will accumulate still more rapidly. Here is found a substantial basis for confidence in the promise of a wheat crop of some 550,000,000 bushels, of which, say 220,000,000 bushels may be required to supply the shortage of Europe.

Taking all in all, there is reason to anticipate an improvement in the business situation, rather than the reverse. The one galling fact is that so much harm has already been done, and so wantonly, by the so called "currency tinkers," who excite distrust abroad and apprehension at home by threatening to upset the whole monetary fabric in their wild schemes of reform. The pernicious effects, of which we have thus far only the premonitions, are portrayed by a habitant of Wall street as follows:

For many months the contracts involving the payment of money have become largely definite, requiring the tender of gold or its equivalent. Both in time loans and engagements for merchandise it has become quite common to require a stipulation that will at all events prevent a settlement in depreciated silver if the two metals should part company in the open market. Nothing but the understanding that the Government will go to almost any length to maintain gold payments for any and all of its issues, where this is demanded, has prevented the exaction of a premium on the dearer metal in the transactions of the street. A large number of contracts have been made in which one of the parties has paid to the other \$1000 down for the privilege of demanding within the ensuing 12 months \$100,000 in gold coin for legal-tender money of a like amount or a certified check upon the bank.

Results far more aggravating have been averted only by the abundance of money and shrewd Treasury management. It may be taken as a business axiom that there can be no confidence—i. e., no proper basis for mercantile credit—until the assurance can be indulged that existing conditions shall

not be overthrown. And what possibility of this so long as Congress is given to radical measures ?

Wire Rod Wages.

A good deal has been written lately on the large increase in wages in rolling mills growing out of the introduction of improved machinery. This has taken place all along the line, but has not been as striking in any one department as it has been in the rolling of wire rods. When William Garrett built his first continuous rod mill at Cleveland he guaranteed that it would roll 275 tons a week from 4-inch billets. Since then the Garrett mills have developed, until to-day they easily turn out year in year out 1000 tons a week, and have made 1400 tons in one week, the highest record being 5500 tons in one month. Taking 1000 tons a week as a fair basis, and assuming that the two crews average one-half of it, which is true, since they take turn about weekly, night and day shift, the wages paid to each individual in the crew are as follows, according to the scale :

Number.	Position.	Scale price per ton.	Average earnings per man per week.	Maximum one month.
1	Rolling.....	\$0.45	\$225.00	\$1237.50
1	Roller's helper.....	.00	45.00	247.50
4	Heating.....	.36	45.00	247.50
4	Helping.....	.13	16.25	88.37
4	Telegraphing.....	.11	13.75	75.62
12	Rougher, 18-inch mill.....	.10	25.00	137.50
12	Bulldogger.....	.07	17.50	96.25
12	Sticker, 12-inch mill.....	.07	17.50	96.25
1	Troughman.....	.06	30.00	165.00
1	Finishing*.....	.10	50.00	275.00
1	Diamond*.....	.09	45.00	247.50
1	Square*.....	.07½	37.50	206.25
1	Oval and shear*.....	.08½	42.50	233.75
1	No. 1 hook.....	.06	30.00	165.00
1	No. 2 hook.....	.05½	27.50	157.25
2	Reeler.....	.068	17.00	93.50

*Share with one additional hand.

Generally the roller hires an assistant, to whom he pays \$7 to \$8 per day.

We have, in the above table, shown the monthly earnings of each of two crews which turned out in one month 5500 tons of rods on one train.

During the whole development of this tremendous increase in product wages have been reduced once, and then only 10 per cent., leaving them as they now are. The only change in the scale which has been signed for the next year is that the rollers are reduced from 45 cents to 30 cents per ton, and it is an interesting fact in this connection that of all the rollers on Garrett trains in the country only two or three are members of the Amalgamated Association who did not, therefore, fight hard for that poorly-paid class.

As we have stated, during the time when product nearly quadrupled the reduction in wages was only 10 per cent., and they remain unchanged to-day, although the probability is that what was a phenomenal record of 5500 tons in one month last year will become the standard in the future. The record has already gone to 277 gross tons in two ten-hour shifts, or close to 1400 tons in one week, equal to 6300 tons in one month. Then,

possibly, a reduction may be demanded, and the press of the country will mourn with the locked-out men over the miseries of the lot of men engaged in rolling American wire rods. Poetic justice would be done if at that time some of the mills were owned by old rollers and heaters.

A committee of the Amalgamated Association of Iron and Steel Workers has been sent from Pittsburgh to Chicago the past week to request the building trades of the latter city to boycott the output of the Carnegie mills if non-union men should be employed there. The statement was made by the members of the committee that similar committees had been sent to the other large cities of the country. The strength of the unions in the building trades thus promises to be fully tested, as Carnegie beams are in use more or less in every section, if, as now seems probable, the works will be run on a non-union basis. The power thus invoked, however, will have to prove itself stronger than any boycott hitherto attempted if it is productive of any effect on the business sought to be injured. There may be trouble in Chicago, it is true, as the union sentiment has been very assiduously cultivated there in recent years, and the several trades are disposed to act harmoniously against their common opponents. The contest begun at Homestead may have results far beyond anything dreamed of when it was first threatened.

PERSONAL.

Charles Douglass, long connected with the Iowa Barb Wire Company, has returned from Europe earlier than he originally planned.

Henry R. Towne, president of the Yale & Towne Mfg. Company of Stamford, sails for Europe next week.

D. R. Lean of Pittsburgh has sailed for Europe.

Edwin Veghte, secretary and treasurer of the Troy Malleable Iron Company, has left for a sojourn at Lake Cossayuna.

N. W. Gray has been appointed manager and L. E. Dunham assistant manager of the Hinkle Furnace of the Ashland Iron & Steel Company, at Ashland, Wis.

Sir Henry T. Wood, one of the English Fair Commission, has returned to this country. He was for many years Secretary of the Society of Arts.

The second annual meeting of the Mechanical Engineering Teachers' Association will be held at Rochester, N. Y., beginning August 18, the place and time of meeting being coincident with that of the American Association for the Advancement of Science, in order to accommodate those who wish to attend both meetings. The object of the former association is stated to be "to determine upon and to secure by co-operation the best courses of study, and the general adoption of methods of instruction, leading to the highest efficiency of schools of mechanical engineering." The officers are S. W. Robinson, Columbus, Ohio, president; A. J. Wiechardt, Las Cruces, N. M., secretary; Storm Bull, Madison, Wis., treasurer.

Signing the Scale.

Since our issue of last week a number of additional signatures to the Amalgamated Association scale for 1892-93 governing wages in rolling mills west of the Allegheny Mountains have been secured. Last week the following firms affixed their signatures to the scale:

- Nixdorff-Krein Mfg. Company, St. Louis, Mo.
- Wetherald Rolling Mill Company, Findlay, Ohio.
- New Albany Rail Mill Company, New Albany, Ind.
- Ohio Falls Iron Company, New Albany, Ind.
- P. Hayden Saddlery Hardware Company, Columbus, Ohio.

Current Technical Literature.

The following list of articles on technical subjects covers the most important papers which have appeared in recent issues of current publications, having special reference to the metallurgy or manipulation of iron and steel or related subjects. The names of the periodicals are given, so that if any person desires to secure a copy of an article he can address the publication direct:

The Duty Test and How it is Conducted. A complete description of the method of testing an engine and boiler, engravings of the devices used and forms for keeping the record. *Power*, New York, July.

How Scrap Rails are Used in India for telegraph poles, bumpers and building frames is described and illustrated in the *Railway Review*, Chicago, July 9.

Modern Progress in Generating High Pressure Steam. Lecture delivered by George H. Babcock at Sibley College, Cornell University. Published in full in the *Crank*, Ithaca, N. Y., June.

The Vyrnwy Aqueduct for supplying Liverpool with water. History of the system, and fully illustrated account of plans and machinery. *Engineering*, London, June 17, 24.

On Platinum Pyrometers. Paper read before the Iron and Steel Institute of Great Britain by H. L. Callendar. *Engineering*, London, June 17.

The Development of American Armor Plate. Detailed account, with engravings, of method of making the tests, summary of results, composition of plates, &c. F. Lynwood Garrison in *Journal of the Franklin Institute*, Philadelphia, June and July.

Among the Dynamo Builders at Lynn. Complete description of the Thomson-Houston plant, the machinery used and methods of manufacture. A. C. Shaw in the *Electrical Engineer*, New York, June 29.

The tube for the first 13 inch steel breech-loading rifle gun for the navy, and the first one made in this country, was successfully jacketed at the Washington Navy Yard on the 7th inst. The forgings are from the Bethlehem Iron Company. That for the tube is 461½ inches long, with a greatest diameter of 24½ inches and weighing 43,480 pounds; that for the jacket is 204½ inches long, with a greatest diameter of 38½ inches and weighing 38,665 pounds. The weight of the completed gun will be 60½ tons and its length 40 feet. The forgings were received at the gun factory on May 24 last, and it will probably take about three months' time to complete the gun, which will form part of the battery of one of the battle ships, each of which carries four guns of this type. The operation was witnessed by the Secretary of the Navy and by Commodore Folger, chief of the Bureau of Ordnance.

Treasury Decisions.

Steel Wire—Stubb's Steel between 5 and 6 W. G.

Before the United States General Appraisers at New York, June 14, 1892. In the matter of the protest, 19,661a-47,076, of Frasse & Co., against the decision of the Collector of Customs at New York as to the rate and amount of duties chargeable on certain steel rods, imported per City of New York, August 27, 1891. Opinion by Wilkinson, General Appraiser.

The question at issue is the classification of Stubb's polished steel smaller than No. 5 wire gauge and larger than No. 6 wire gauge. The merchandise of that character was assessed for duty at 45 per cent., as costing over 4 cents a pound, and is claimed to be dutiable at $7\frac{1}{2}$ cents a pound, under paragraphs 146 and 144, N. T.

Paragraph 147 provides that rods smaller than No. 6 wire gauge shall be classed as wire. In default of good reasons to the contrary, the converse of this proposition might hold, but for many years merchandise of the character named has been invoiced as steel wire, known as steel wire and classified as steel wire. In the case of Frasse vs. Robertson (S. 7314), the United States Circuit Court of this district held that Stubb's rods of polished steel larger than No. 5 wire gauge were not dutiable as wire; but the practice then prevailing of classifying Stubb's steel wire No. 5 wire gauge and smaller as wire was not disturbed.

We find that the merchandise covered by the protest is steel wire costing over 4 cents a pound, and the decision of the Collector is affirmed accordingly. This ruling is in conformity with G. A. 678.

Trade Publications.

PAWLING & HARNISCHFEGGER of Milwaukee, Wis., have issued catalogues describing some of the appliances made by them, consisting in part of Beck's patent duplex feed engine with patent duplex cable system for operating saw mill carriages. This engine consists of a pair of self contained double acting steam engines, provided with self-packing pistons, steel piston rods, improved self-oiling cross heads and steel connecting rods with adjustable boxes, the aim in the whole design being to simplify the construction and make the machine such as to require but little attention. Outside of the cylinder heads there is not a single bolted or packed joint or gasket which comes under live steam pressure, hence no matter how hard the engine is worked there is not a single joint to work loose and leak. The steam passages are extremely short and direct, are quickly filled and emptied, and there is less amount of clearance to be filled with steam at each reversal of the engines. Another catalogue deals with special machinery intended for brewers, including driers, hop extractors and coolers, aerating beer coolers, &c.

THE E. W. BLISS COMPANY, LIMITED, of Brooklyn, N. Y., have issued a very complete catalogue of the various tools made by them, consisting in part of presses of various types, punching and shearing machines, engine lathes, vertical milling machines, boring mills, &c. This is the first catalogue issued by the company since they obtained the business of the Stiles & Parker Press Company, and it therefore naturally includes the machines formerly made by the latter company.

IRON AND STEEL WORKING MACHINE TOOLS built by the Pond Machine Tool Company of Plainfield, N. J., and 111 Liberty street, New York, are described in a large catalogue recently issued. The machines consist of engine lathes, shaft turning lathes, vertical boring and turning mills, car wheel and axle lathes, hydraulic wheel presses, radial drills, planers, &c.

HEAVY SUBSTANTIAL TOOLS intended for the equipment of iron shipyards, boiler shops and bridge works are described in a '92 catalogue by the Hilles & Jones Company of Wilmington, Del. During the past few months this company have built many machines of special designs, a few of which are illustrated in the catalogue, the engravings employed being particularly bright and clear. The machines consist of shears and punches of various types.

THE SECOND EDITION of the general catalogue, No. 61, by the B. F. Sturtevant Company of Boston deals with the blowers and exhausters, portable forges, hot blast, steam-heating apparatus, steam engines, &c., made by them. For many years these machines have been well known and have merited high approval.

THE CATALOGUE issued by the Sheffield Velocipede Car Company of Three Rivers, Mich., deals, of course, principally with descriptive matter relating to the various types of hand and push cars adapted for railroad service made by them. In addition to this mention is made of other railroad specialties consisting of stand pipes of every kind, cut-out switches, grain doors, &c.

BRASS AND IRON GOODS and specialties for steam water, gas, oil, &c., are described in an 1892 catalogue issued by the Lunkenheimer Brass Mfg. Company of Cincinnati, Ohio. The specialties made by this company have been on the market for the past 30 years and have well deserved the high reputation they have earned.

THE MCNAULL UNIVERSAL RADIAL DRILLS are described and illustrated in pamphlets recently received from the McNaull Machine and Foundry Company of Ronceverte, W. Va. A No. 1 universal radial drill is designed for general machine shop, boiler and bridge work. In separate sheets they also describe their No. 0 and Nos. 2 and 3. It has been the aim in designing these machines to make them as little complicated as possible, and to give all working parts long bearings, the machines being capable of doing heavy work requiring great rigidity, and yet are so simple in design as to permit them to be furnished at low cost.

ATYOMATIC OIL PRESSES, wax, lard and tallow presses, leather belt presses, baling presses, hydraulic and steam presses, power screw presses, and also cider and wine machinery, form the subjects described by the Boomer & Boschert Press Company of Syracuse, N. Y., and 236 Greenwich street, New York city. They may be said to make almost every conceivable kind of press adapted for all kinds of work.

WE HAVE RECEIVED from the Watts-Campbell Co. of Newark, N. J., a very handsomely executed catalogue descriptive of the several types of Corliss engines built by them. In addition to describing very clearly and yet briefly the several details peculiarly their own, they touch upon a few well-established features in steam engineering, a knowledge of which will be of service in determining the choice of an engine suited to the work to be done and the conditions under which it is to be used. This information is such as experience has demonstrated to the builders as likely to be of service to those contemplating the introduction of a steam plant. This establishment has been in the business of manufacturing steam engines for more than 35 years, and their engines are now in service in some of the most important manufacturing concerns in the country.

THE WALWORTH MFG. COMPANY of 14 Oliver street, Boston, have just issued an elaborate catalogue describing the brass and iron goods and tools made by them for steam, water and gas work. In the preface attention is called to the fact that "with the coming in of the present year we celebrate our fiftieth anniversary." They have greatly increased their facilities in the way of new brass and iron foundries, which, in connection with their large machine shops and forging works, enable them to meet the growing demands of the trade. The book is divided into the following parts: Fittings for wrought-iron pipe, standard brass and iron valves and cocks, special brass and iron valves and cocks, engine and boiler trimmings, steam fitters' and engineers' tools, water-work and hose goods, steam and hot-water heating apparatus, automatic link sprinklers, electric railway poles and brackets, gas machines and mixers, iron pumps and miscellaneous goods.

THE OTTO GASOLINE ENGINES form the subject of a catalogue by the Otto Gas Engine Works of Philadelphia. The power in the Otto gasoline engine is obtained from the combustion of gasoline and air in the engine cylinder. The engine does not use any vaporizers, carburetors or other dangerous apparatus purporting to carbonize the air, and which under certain conditions are filled with dangerous mixtures and frequently explode. The Otto is

a poppet-valve engine. The fuel is not admitted through a slide valve or similar part, requiring much cleaning or lubrication. In it all air is excluded from contact with gasoline until it is admitted to the engine cylinder in fluid form. The gasoline is carried (from small supply tank outside the building) in a galvanized-iron pipe, with soldered joints, to the engine, and provisions are made against any possible leak of gasoline between engine and tank, or after it has reached the engine. A small valve admits the fuel to the cylinder and this valve is under the control of a governor, so that no more gasoline is taken at any time than is necessary to work the engine at uniform speed in proportion to a varying load. The gasoline flows to the valve by gravity, and upon being atomized within the engine cylinder by a current of air, is at once fired by an electric spark or a hot tube.

THE MACKELLAR FOUNDRY FACING & SUPPLY COMPANY of Quincy, Ill., present a circular in which the attention of foundrymen is directed to the good qualities of the facings they make.

THE "WASS" GREASE, Air and Mud Extractor, Handren Patent Steam Trap and the Eureka Lubricating Compound are described in a circular by Thornton N. Motley & Co., sole agents, 43 John street, New York. The Albany Railroad Forch is described in a separate circular.

THE DAVIS-COLBY ORE ROASTER COMPANY of Philadelphia are placing in the hands of the trade a pamphlet descriptive of the roasting kiln for iron ore so widely known in this country. A number of different designs are published, among them a kiln adapted for the burning of oil and a design recently erected. An engraving is presented also of a later type for roasting ores for grinding out carbonic acid and combined water. The kiln is in use at the Croton mines, at Brewsters, and at the Colebrook, Chickies, Cornwall, Oregon and Colorado furnaces. Two new kilns are also being built at Midvale, N. J.

THE OHIO MACHINE TOOL WORKS, of Cincinnati, Ohio, illustrate and describe in a special circular their patent motor gear lathe, the object aimed at in the design of which was to enable an ordinary engine lathe to do higher duty. It is also of great value as a boring lathe, and on account of its unusual stiffness will do heavier boring with greater facility than the ordinary boring lathe. It is capable of performing three operations at one time on large quantities of work pertaining to details of engines either of the Corliss or slide type.

THE DODGE MFG. COMPANY, Mishawaka, Ind., have issued a 70-page catalogue for 1892 covering their power-transmitting machinery. The specialties illustrated, described and priced are adjustable ball and socket hangers, double-brace hangers, post hangers, hanger bearings, pillow blocks, shafting, couplings, collars, counter shafts, floor stands, adjustable carrier frames, mule pulley stands, belt tighteners, brackets, lubricators, friction clutches, Independence wood split pulleys, cone pulleys, dynamo pulleys, sheave wheels, &c. The company are engineers, founders and machinists. Their ground plant covers 60 acres, and they have a melting capacity in their foundry of 80 tons per day.

In the suit in the United States Court for the Northern District of Ohio of the Canton Steel Roofing Company vs. Alvin C. and William Kanneberg of the Kanneberg Roofing Company for infringement of patent on sheet metal roofing, the court has decided that the roofing manufactured by the Kanneberg Roofing Company is an infringement upon patents owned by the Canton Steel Roofing Company of Canton, Ohio, and the Kanneberg Roofing Company are perpetually enjoined from the manufacture of said roofing.

The New York, Ontario and Western's new elevator, to be built at Oswego, N. Y., will be of iron and steel and have a capacity of from 250,000 to 400,000 bushels. Its cost is estimated at from \$250,000 to \$500,000. It will have 16 feet of water at its docks and will be equipped with two legs, each having an elevating capacity of 10,000 bushels an hour, and will be built with a number of car tracks running under, so that from 12 to 18 freight cars can be loaded simultaneously.

PIG OUTPUT REDUCED.

The long-continued pressure of low prices and the poor outlook for the immediate future are at last telling heavily on the current rate of production. The reduction in the make would unquestionably have told on values were it not for the fact that the consumption, temporarily at least, has been heavily curtailed by the closing down of so many Western and Eastern rolling mills and steel works.

The weekly product of all the furnaces on July 1 compared as follows with that of preceding periods:

	Furnaces in blast.	Capacity per week. Gross tons.
July 1, 1892	254	169,151
June 1	299	173,674
May 1	268	177,886
April 1	280	185,462
March 1	306	189,902
February 1	308	187,383
January 1	305	188,082
December 1, 1891	298	188,135
November 1	304	187,085
October 1	306	181,615
September 1	299	170,846
August 1	296	166,576
July 1	293	171,115
June 1	258	146,782
May 1	237	115,590
April 1	228	113,483
March 1	227	104,526
February 1	224	106,050
January 1	302	167,509
December 1, 1890	340	183,846
November 1	342	177,958
October 1	326	179,283
September 1	323	171,776
August 1	324	164,798
July 1	306	175,757
June 1	345	180,791
May 1	344	180,069
April 1	344	178,474
March 1	343	180,991
February 1	334	173,651
January 1	333	174,038
December 1, 1889	328	169,151
November 1	323	165,225
October 1	311	151,057
September 1	294	134,068
August 1	286	145,899
July 1	285	141,419

The condition of the anthracite furnaces was as follows:

Anthracite Furnaces, July 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New York	19	4	1,748	15	5,874
New Jersey	12	12	1,545	10	3,083
Spiegel	3	3	220	0	0
Pennsylvania:					
Lehigh Valley	46	26	10,664	20	7,180
Spiegel	1	0	0	1	56
Schuylkill Valley	30	13	5,373	17	6,470
U. S. Susquehanna Valley	16	7	2,014	9	1,578
L. Susquehanna Valley	16	6	4,480	10	2,439
Spiegel	1	1	328	0	0
Lebanon Valley	15	10	5,382	5	1,640
Totals	159	72	31,754	87	28,820

For a number of months past our records of active anthracite furnaces show the following:

	Furnaces in blast.	Capacity per week.
July 1, 1892	72	31,754
June 1	76	33,269
May 1	81	35,473
April 1	84	36,487
March 1	89	38,678
February 1	92	38,124
January 1	94	38,307
December 1, 1891	85	34,905
November 1	87	33,802
October 1	85	32,459
September 1	82	31,214
August 1	88	32,860
July 1	92	37,892
June 1	91	36,561
May 1	90	35,331
April 1	91	36,598
March 1	93	38,543
February 1	95	40,212
January 1	101	43,166
December 1, 1890	105	43,474
November 1	104	42,141
October 1	100	38,627
September 1	104	39,115
August 1	106	41,018
July 1	112	42,543
June 1	117	45,142
May 1	123	46,912
April 1	119	46,110
March 1	115	45,790

During June, Crown Point in New York, Musconetcong and Wharton in New Jersey, Temple, one Hokendauqua, one Lackawanna and one Chestnut Hill were blown out, while, on the other hand, one New Jersey Zinc, one Pioneer, one Bethlehem and one of the stacks of the Pennsylvania Steel Company were started.

The condition of the coke furnaces on the 1st inst. is shown in the following table:

Coke Furnaces, July 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New York	6	2	2,286	4	2,674
Pennsylvania:					
Pittsburgh district	25	22	33,406	3	4,846
Spiegel	1	1	950	0	0
Shenango Valley	18	6	5,414	12	9,418
Junata and Conemaugh Valley	17	7	5,015	10	4,501
Spiegel	1	1	465	0	0
Youghiogheny Valley	3	1	842	2	1,500
Miscellaneous	4	1	576	3	1,078
Maryland	5	1	1,462	4	4,470
West Virginia	1	0	0	1	250
Wheeling District	0	8	8,861	1	0*
Ohio:					
Mahoning Valley	15	10	9,008	5	3,493
Central & Northern	11	8	5,483	3	2,654
Hocking Valley	12	2	1,025	10	2,720
Hanging Rock	15	6	912	9	2,450
Indiana	2	1	257	1	180
Illinois	18	12	18,456	6	5,900
Spiegel	1	1	1,251	0	0
Wisconsin	4	1	1,202	3	2,036
Missouri	6	0	0	6	3,372
Minnesota	1	1	750	0	0
Colorado	3	2	1,150	1	566
The South:					
Virginia	20	12	6,546	8	4,330
Kentucky	4	1	300	3	1,405
Alabama	38	24	16,429	14	7,455
Tennessee	13	8	4,701	5	2,315
Georgia	2	0	0	2	1,045
North Carolina	1	1	83	0	0
Totals	256	140	127,433	115	68,778

*Alternate stack.

As compared with previous months, the active coke furnaces make the following showing:

	Furnaces in blast.	Capacity per week.
July, 1892	140	127,433
June 1	145	128,852
May 1	147	132,313
April 1	152	138,116
March 1	163	143,490
February 1	167	138,268
January 1	163	138,611
December 1, 1891	162	142,747
November 1	162	142,152
October 1	163	135,997
September 1	161	127,664
August 1	154	126,736
July 1	150	122,422
June 1	124	100,165
May 1	98	70,829
April 1	96	67,570
March 1	113	85,096
February 1	125	94,473
January 1	143	112,153
December 1, 1890	168	127,634
November 1	168	122,555
October 1	170	127,247
September 1	156	119,757
August 1	150	113,040
July 1	163	120,673
June 1	167	123,340
May 1	169	122,459
April 1	173	121,560
March 1	160	122,595
February 1	169	118,568
January 1	169	119,396
December 1, 1889	162	116,319
November 1	160	112,269
October 1	154	102,454
September 1	141	90,744

Among the coke furnaces in Western Pennsylvania there have been no changes of consequence, nor do the Wheeling or Mahoning Valley districts report any news. We may note, however, that Mattie Furnace, formerly known as the Girard, is doing excellent work. Cherry Valley is running again, but Belfont, in the Hanging Rock region, has stopped. Illinois records the blowing in of the third Joliet. It may be stated in this connection that the product of the State in the first six months of the year was 478,205 gross tons. In Wisconsin one of the Bay View furnaces is again producing. Missouri has not now a single active coke furnace. The South is running along quite full, but one

stack, one of the Sloss, having gone out during June. We estimate the product of Alabama for the first six months at 434,000 tons, while Tennessee made 133,000 tons and Virginia 160,000 tons, against about 800,000 tons for Pittsburgh, 238,000 tons for the Shenango Valley, 230,000 tons for the Wheeling district and 246,000 tons for the Mahoning Valley. In the East the Lehigh Valley ranks first, with about 279,000, the Schuylkill Valley following with about 200,000 tons, the Lebanon Valley with 150,000 tons and the Lower Susquehanna with about 105,000 tons. We estimate the total coke-iron product at 3,400,000 tons, that of the furnaces grouped among the anthracite at 925,000 tons, and the charcoal furnaces at 250,000 tons.

The condition of the charcoal furnaces on the 1st inst. is presented in the following table:

Charcoal Furnaces, July 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New England	13	4	320	9	640
New York	5	2	285	3	250
Pennsylvania	13	2	260	11	695
Maryland	7	1	128	6	600
Virginia	13	1	100	12	735
Ohio	12	6	398	6	484
Kentucky	3	0	0	3	965
Tennessee	7	4	1,040	3	350
Georgia	3	1	250	2	320
Alabama	13	6	1,075	7	1,360
Michigan	20	8	2,853	12	3,298
Missouri	2	1	309	1	292
Wisconsin	5	4	1,995	1	90
Texas	4	1	144	3	730
Washington	1	0	0	1	170
Oregon	1	1	225	0	0
Totals	122	42	9,964	80	10,949

As compared with previous months, the record of active charcoal furnaces stands as follows:

	Furnaces in blast.	Capacity per week.
July 1, 1892	42	9,964
June 1	48	11,613
May 1	47	10,100
April 1	44	10,859
March 1	50	11,734
February 1	49	10,991
January 1	48	11,164
December 1, 1891	52	11,063
November 1	55	11,731
October 1	58	13,159
September 1	56	11,968
August 1	54	10,980
July 1	50	10,801
June 1	44	10,056
May 1	29	9,730
April 1	41	9,395
March 1	51	10,890
February 1	56	11,365
January 1	56	12,280
December 1, 1890	67	12,738
November 1	70	13,262
October 1	68	13,380
September 1	63	12,904
August 1	59	10,745
July 1	61	12,511
June 1	61	12,312
May 1	52	10,698
April 1	52	10,804
March 1	59	12,606
February 1	58	11,378
January 1	59	11,485
December 1, 1889	66	12,779
November 1	67	12,896
October 1	63	12,047
September 1	60	11,327

Quite a large number of furnaces have stopped work, among them Landon, in Connecticut, Chatham in New York, Muirkirk in Maryland, Detroit and Union in Michigan, Minneapolis and Ironaton in Alabama, soon to be followed by Gadsden in the same State.

The number of furnaces which actually have stock on hand are 266, divided as follows: 133 coke, 568,032 tons; 69 anthracite, 178,474 tons, and 64 charcoal, 255,769 tons. These figures indicate that there has been an increase in all directions, notwithstanding the fact that a slight decrease in the stocks of coke and anthracite irons took place during the month of May.

The Homestead Troubles.

The past week has been a memorable one in Pittsburgh iron circles, and the exciting events that have taken place have resulted in considerable loss of life and property. The whole country, or more properly speaking, almost the entire civilized world, is thoroughly acquainted with the causes which led to the terrible riots at Homestead on Wednesday and Thursday of last week, and which bid fair to be renewed just as soon as attempts are made by the Carnegie Steel Company, Limited, to introduce new workmen into the Homestead Steel Works to take the places made vacant by the refusal of the strikers to return to work at the terms proposed by the firm. Last week the Homestead Steel Works were in the hands of an armed mob for 72 hours or longer, and any man who attempted to take any active part in the efforts made to restore this property to the rightful owners was shot down in his tracks. In the face of this, we are informed that the citizens of Homestead are a "peaceable class of citizens" and have constantly endeavored to maintain at all times the supreme majesty of the law. If this is a true interpretation of what is meant when the term "peaceful and law-abiding community" is used, it is well that the meaning of the term is confined to Homestead, and is not shared in by the community at large. But we must not forget that the citizens of Homestead had good and sufficient cause to take the law into their own hands. As we understand it, the Carnegie Steel Company, Limited, had the audacity to announce some time since that they would operate the Homestead Steel Works as best suited their own interests, and in the future would refuse to have any dealings with that high and mighty organization known as the Amalgamated Association. Surely this was carrying things too far by the firm. Of course the Carnegie Steel Company, Limited, were the exclusive owners of the Homestead Steel Works, and had spent millions of dollars in equipping the plant with the most modern machinery that could be procured, regardless of what it cost. In addition to this, it is well to remember that at the time the Homestead Steel Works was purchased by the firm the plant was a small and unimportant one, and gave employment to a few hundred men, as against as many thousand that were employed there up to the time of the starting of the present troubles. The development of this plant by the Carnegie Steel Company, Limited, necessitated the employment of hundreds of skilled workmen at good wages, many of whom are property owners in Homestead to-day and are well situated in every way. When the 1889-92 scale expired by limitation and the changed condition of affairs, both at the works and in the business world, necessitated the formulating of a new wage scale, these men saw fit to reject this scale, and, as a result, the firm were compelled to look about for men to take the places. It is at this point that the "quiet and peaceable" citizens of Homestead proceeded to show to the world at large the stuff of which they are made. They took possession of the Homestead Steel Works and denied admission to anybody and everybody, whether members of the firm or not. Arms and ammunition were procured, and it was worth a man's life to even go to Homestead, unless he could show that he was also a believer in the law as interpreted by the "peaceable and order loving" citizens of Homestead. When the Sheriff of Allegheny County with his deputies visited Homestead, he was taken in hand by the strikers, who proceeded to inform him that they were "law-abiding citizens," and if he cared to continue in

office he had better take the first train back to Pittsburgh. This the Sheriff did, and the subsequent attempts of the firm to get possession of the Homestead plant by the aid of Pinkerton detectives are too well known to need any further telling at our hands.

In our issue of last week the reports of the riots at Homestead Steel Works, brought about by the attempts of the firm to introduce 300 Pinkerton detectives into the works for the purpose of guarding them, closed with the account of the surrender of the Pinkerton detectives, who were lodged on the two model barges. The surrender of the Pinkerton men occurred about 5 30 o'clock on Wednesday evening, the 6th inst. As soon as the Pinkerton men left the boats the mob swept on to them and burst in the doors on the side. The boats were quickly pillaged, and everything that could be removed was carried off. The march of the Pinkerton men from the barges into Homestead led to disgraceful scenes. From the point in the Monongahela River where the barges were anchored to the heart of Homestead is about a mile. The march of the Pinkerton men from the barges to the building to which they were conducted was made through a howling mob of 5000 or more, armed with weapons of every description from a Winchester rifle to a broomstick. This mob was composed not only of men, but women and children as well, and the women seemed to excel in their efforts to beat and torture the Pinkerton men. There seems to be no doubt whatever that the officials of the Amalgamated Association did everything in their power to afford them protection; they were utterly unable, however, to cope with the mob. After being closely housed in a large building in Homestead for some hours, a special train was secured and the detectives were loaded on it and brought to Pittsburgh. After the arrival of the train in Pittsburgh it was taken out to Ben Venue station, a few miles from that city, on the Pennsylvania Railroad, and was kept there for some hours under charge of the Pittsburgh police. Later a special train was secured, and the majority of the men were sent to New York and Philadelphia, while others were sent to Chicago. There is no doubt whatever that if the attempts of the firm to introduce Pinkerton men into the works had proved successful the horrible scenes enacted would never have taken place. It turned out otherwise, and the large loss of life and property has been the result.

After the departure of the Pinkerton men from Homestead matters quieted down very fast and a great change came over the scene in a few hours. Hundreds of men who had been engaged in the hostilities on both sides of the Monongahela River gave up their posts for a while and came back to Homestead. With the arrival of daylight on Thursday morning an attempt was made to clear up as much as possible the wreck caused by the terrible scenes enacted on the previous day. The plant of the Homestead Steel Works was not damaged to a very great extent, with the exception that all the loose material lying around was carried to the river bank and all the scrap iron that could be procured was carried away and much of it used in loading the two cannons used by the mob. It is the general impression now that no further attempts to import Pinkerton men into Homestead will be made by the Carnegie Steel Company, Limited.

Matters at Homestead remained quiet all day on Thursday and Friday, and no outbreak occurred. The men, however, are as determined as when the first outbreak occurred to resist any attempt of the firm to introduce foreign workmen to take the places which they voluntarily gave

up. On Friday morning a statement was sent out, which presumably originated from the officials of the Amalgamated Association, and which was to the effect that the Homestead Steel Works had again been turned over to the Carnegie Steel Company, Limited, and was in their possession. The falsity of this statement was at once proven from the fact that Assistant Superintendent Wood and Otis H. Childs, an official of the Carnegie Steel Company, Limited, went to Homestead and were positively refused admission to the plant by a guard of men who were stationed at the gates. Messrs Wood and Childs were also given to understand that any attempts made by them to force an entrance into the plant would be productive of serious results.

On Friday afternoon Sheriff McCleary of Pittsburgh, accompanied by two deputy sheriffs and a number of officials of the Amalgamated Association, and also W. J. Brannan, attorney for the Amalgamated Association, visited Homestead and called a meeting of the strikers. This meeting was held in the building formerly occupied by the famous Advisory Committee, and was very largely attended by the strikers. Wm. Weihe presided at the meeting, but did not make any address.

On Wednesday evening Sheriff McCleary issued a proclamation to the citizens of Pittsburgh, which reads as follows: "All good citizens are summoned to appear at the Sheriff's office to-morrow morning (Thursday) at 9 o'clock with arms and subsistence to aid the Sheriff in suppressing the riot now in progress at Homestead." In answer to this proclamation of the Sheriff's there were only about 25 men responded and more than half of these were armed with certificates from their physicians stating that they were physically unable to serve. In addition to this the Sheriff made attempts to swear in a number of deputies, but it was also unsuccessful.

As we announced in the concluding report of our reports of the riots at Homestead last week, it has been found that the only way the Homestead Steel Works can be taken out of the hands of the people at Homestead, who took possession of this plant about July 1 and have prevented the firm from operating it, is to call out the State troops. The determination of the Governor of Pennsylvania to call out State troops to defend the Homestead Steel Works and restore it to the Carnegie Steel Company, Limited, was caused by the receipt of the following dispatch, sent on Sunday night, the 10th inst., to the Governor by Sheriff McCleary of Pittsburgh. The dispatch is as follows:

PITTSBURGH, PA., July 10, 1892.

To Robert Pattison, Governor, Harrisburg, Pa.:

The situation at Homestead has not improved. While all is quiet there, the strikers are in control and openly express to me and the public their determination that the works shall not be operated unless by themselves. After making all efforts in my power, I have failed to secure a posse respectable enough in numbers to accomplish anything, and I am satisfied that no posse raised by civil authorities can do anything to change the condition of affairs and that any attempt by an inadequate force to restore the right of law will only result in further armed resistance and consequent loss of life. Only a large military force will enable me to control matters. I believe if such force is sent the disorderly element will be overawed and order will be restored. I therefore call upon you for assistance. WILLIAM H. McCLEARY, Sheriff.

Immediately upon receipt of this dispatch Governor Pattison ordered out the entire National Guard of Pennsylvania to move to the support of the Sheriff of Allegheny County in preserving the peace at Homestead. The following telegram, signed by the Governor, was sent to Geo. R. Snowden, Major-General Commanding

National Guard of Pennsylvania. The telegram is as follows:

George R. Snowden, Major-General Commanding N. G. P.:

Put the division under arms and move at once, with ammunition, to the support of the Sheriff of Allegheny County at Homestead. Maintain the peace, protect all persons in their rights under the Constitution and laws of the State. Communicate with me.

ROBERT E. PATTISON, Governor.

On Monday morning, the 11th inst., a self-constituted committee composed of employees of the Upper and Lower Union Mills of the Carnegie Steel Company, Limited, at Pittsburgh, visited the general offices of that firm on Fifth avenue in that city for the purpose of arranging, if possible, a conference between the Carnegie Steel Company, Limited, and their Homestead employees. The committee gave the firm to understand that their mission was one of peace entirely, and their only object in calling upon the firm was to endeavor to bring the Homestead workers and the firm together in conference, with the idea that a settlement of the trouble now existing might be arranged. This committee was received by an official of the Carnegie Steel Company, Limited, and after a discussion of the matter, the answer was returned that under no considerations whatever will any more conferences be held between Homestead workmen and the Carnegie Steel Company, Limited. The statement was made that the time for conferences has passed, and that as the Homestead Steel Works had not been in possession of the firm for some days past, and in view of the acts of lawlessness committed by their former employees, a conference was altogether out of the question. The committee retired without stating what action would be taken over the refusal of the firm to meet their Homestead workmen. Statements have been made that in case the firm refused a conference with their Homestead workmen a strike would occur at the Upper and Lower Union Mills, and both those plants would be shut down until the Homestead trouble was arranged. This is not believed, however, and it is not thought that there will be any labor trouble at any of the other plants of the Carnegie Steel Company, Limited, brought about by the troubles now existing at Homestead.

Advices just received from Homestead state that at 9.25 a.m. on Tuesday the Homestead Steel Works were formally delivered over to the Carnegie Steel Company, Limited. The town of Homestead has been placed under martial law, and everything is reported as quiet. No outbreak is expected until an attempt is made by the firm to introduce new workmen into the plant, when trouble may possibly occur.

(By Telegraph.)

The Congressional committee appointed to investigate the causes leading to the riots at Homestead last week arrived in Pittsburgh on Tuesday morning, the 12th inst. The committee is composed of W. C. Oates of Alabama, W. D. Bynum of Indiana, C. J. Boatner of Louisiana, Judge E. B. Taylor of Ohio and Case Broderick of Kansas, Mr. Oates being chairman of the committee. Upon their arrival in Pittsburgh the committee made a visit to Homestead and thoroughly inspected the Homestead Steel Works and the surrounding grounds, for the purpose of locating the different points where the encounters took place, and also where the now famous barges were located. The committee was shown around at Homestead by Otis H. Childs, an official of the Carnegie Steel Company,

Limited. On Tuesday evening the committee assembled in the banquet hall of the Mononghela House for the purpose of hearing evidence. The first witness called was H. C. Frick, chairman of the Carnegie Steel Company, Limited. At the start out Mr. Frick stated that the Carnegie Steel Company, Limited, was a limited partnership, persons composing the firm being Andrew Carnegie, Henry Phipps, Jr., Geo. Lauder, H. M. Curry, W. L. Abbott, Jno. G. A. Leishman, F. T. F. Lovejoy, Otis H. Childs, H. C. Frick, and a number of others holding smaller interests. Mr. Frick stated that about 3800 were employed in the Homestead Steel Works in the manufacture of structural iron for fire-proof buildings, beams, channels, &c., and also the manufacture of armor plates and plates of all kinds. He stated that their firm had a contract for 6000 tons of armor plates, ranging in thickness from 4 to 20 inches. Mr. Frick produced the pay roll of the 119-inch mill at Homestead for the month of May last, which contains the name of every man and boy employed in that department, the number of days he worked and the amount he received, wages paid ranging from \$40 to \$275 per month, the wages of the rollers of course being the highest. These average from \$250 to \$275 per month. Heaters, from \$185 to \$190; heater's helpers, about \$130; trainmen, from \$97 to \$120; head shearmen, \$100; shearmen's helpers, \$95, and on down to the lowest-paid labor in the mill. Mr. Frick gave other additional testimony in regard to the cause leading to the troubles at Homestead, and presented a statement showing the decline in prices since July 1, 1889, of the various lines of manufacture made at Homestead. Correspondence between the Carnegie Company, Limited, and the Pinkerton Detective Agency regarding the employment of Pinkerton detectives was also produced. The examination of Mr. Frick was concluded about 10 o'clock, and the committee adjourned to meet on Wednesday morning at 9 a.m. At this writing William Weihe, president of the Amalgamated Association, is on the stand. It is expected that this investigation will bring out much important evidence as to the cause of the riots at Homestead, and will lay bare many things which have not been made public. A question put to Mr. Frick as to the cost of making a ton of Bessemer steel billets at Homestead was not answered, Mr. Frick declining to give the information. Another conference between Pittsburgh manufacturers and the Amalgamated Association was held here yesterday. Considerable progress was made looking to the formulating of the wage scale, and it is said that the memorandum of agreement with the exception of two clauses has been decided upon. Another conference will be held Wednesday afternoon at 2 p.m.

The White River Iron & Steel Company, Muncie, Ind., and the Westerman Natural Gas Iron Company, Marion, Ind., signed the Amalgamated Association scale yesterday. On very good authority we can state that a movement is on foot among the employees of the Upper and Lower Union Mills at Pittsburgh and the Beaver

Falls Mills at Beaver Falls, all owned and operated by the Carnegie Steel Company, Limited, to close down those plants on Thursday of this week, unless H. C. Frick consents to reopen negotiations between his firm and Homestead employees. In case the employees of the above establishment go out on a strike in support of the Homestead workers, it will be a violation of contract, as the Amalgamated Association scales have been signed for all of the above three plants.

The Iowa Geological Survey.

The last Iowa Legislature passed an act for a complete geological survey of the State, and appropriated \$10,000 annually for that work. The State Geological Board met on the 8th inst. to appoint a State Geologist. The members of the board are President Schaeffer of the State University, President Beardshear of the Iowa Agricultural College, Professor Nutting of the State University, president of the Academy of Science, Auditor Lyon and the Governor. All were present. The board spent the morning in discussing the provisions of the bill passed by the last Assembly. It was found the clause requiring the board to meet every month was rather inconvenient, inasmuch as the members could not assemble so often. The salary of the State Geologist also received much attention. It was fixed at \$2500, he to pay his own expenses. The candidates for the place were W. J. McGee of the United States Geodetic Survey, R. E. Call, Charles Ayres, W. Webster, Dr. Floyd Davis and J. E. Todd. After a long discussion of the merits of the candidates, Samuel Calvin of the scientific department of the State University was elected. Charles Keyes, it is understood, will be his assistant.

The Westinghouse Electric and Mfg. Company of Pittsburgh have brought suit against the Duquesne Traction Company and the Pittsburgh, Allegheny and Manchester Traction Company, for infringement on the old Finney overhead patent trolley system. The suit is similar in many respects to the one recently brought against the Pittsburgh and Birmingham Traction Company, which was compromised by the latter company agreeing to equip their entire system with the new Westinghouse single reduction and gearless motors.

Furnace No. 3 of the Troy Steel & Iron Company was successfully blown in on July 5, the match being applied by Miss Jessie F. Thomas of West Troy. Furnace No. 1, which was blown in in February, 1891, is doing excellent work. Furnace No. 2, blown out April 20 last, made a very satisfactory blast, producing 108,000 tons Bessemer iron. It is now being relined and repaired. The Bessemer steel works of this firm will start up on July 18.

In addition to the firms reported elsewhere in this issue as having signed the Amalgamated Association scale for 1892-93 the Findlay Rolling Mill Company, Findlay, Ohio, and the Anchor Iron & Steel Works of Cincinnati, Ohio, with works at Newport, Ky., have also signed. It should be borne in mind that all firms thus far reported as having signed the Amalgamated Association scale for 1892-93 do so with the understanding that they will be allowed any concessions that are made when the scale for the above period is finally adopted.

Benjamin Talbot of the Southern Iron Company, Chattanooga, has returned from Europe.

Iron Scale Conferences.

The stirring events at Homestead during the past week have done much to prevent any material progress being made in arriving at a wage scale settlement between the Pittsburgh iron manufacturers and the Amalgamated Association. In the early part of last week two conferences were held in the Ferguson Building, Pittsburgh, but nothing of a definite measure was accomplished. On Wednesday a further conference was to have been held in the same place, but owing to the absence of Wm. Weihe, president of the Amalgamated Association, who had been called to Homestead, the meeting was in session only a few minutes, and adjourned without any action whatever being taken. While the conferences between the manufacturers and the Amalgamated Association thus far have proven fruitless, the feeling is now becoming pretty general that a settlement will be arrived at within a very short time. The Conference Committee delegated by the Amalgamated Association before the adjournment of that body has been vested with certain powers to treat with the manufacturers, and while they have no authority to make any material changes in the wage scale as prepared originally by the Amalgamated Association, they have the right to make any minor changes that the manufacturers may insist upon and which the Conference Committee believe should be granted. The serious troubles at Homestead have also had the effect of producing a feeling on both sides that a settlement should be arrived at if at all possible. In certain quarters statements are made to the effect that the Pittsburgh manufacturers will agree to allow the \$5.50 rate for boiling to stand, if the Amalgamated Association Conference Committee will agree to make certain reductions in the wages of rollers, heaters and other high-priced labor. It is certain that the Amalgamated Association will not agree to a reduction to \$4.50 per ton for boiling, and in order to bring about a peaceful settlement, it is expected that the Pittsburgh manufacturers will waive that point. Important developments regarding the arranging of a wage scale for Pittsburgh will no doubt be forthcoming during this week.

A great consolidation has been effected under the name of the Michigan Peninsular Car Company by the fusion of the interests of the Michigan Car Company, the Peninsular Car Company, the Detroit Car Wheel Company, the Michigan Forge and Iron Company and the Detroit Pipe and Foundry Company, all of Detroit. The following are the directors of the new concern: Hon. James McMillan, Hugh McMillan, William C. McMillan, Frank J. Hecker, Charles L. Freer, Watson M. Freer, Hon. Russell A. Alger, all of Detroit and former officers and directors of the consolidated companies. Matthew Addy, president of Addyston Pipe and Steel Company, Cincinnati, and George R. Turnbull, vice-president New York Guaranty and Indemnity Company, New York. The plant has been appraised at \$5,605,787.47, and the cash assets at \$1,279,000, by Henry B. Ledyard, president of the Michigan Central Railroad; Albert Antisdell of Chicago, J. F. Barnard and W. J. Lippincott of Cincinnati. Barrow, Wade, Guthrie & Co. of New York have examined the books and accounts of the Michigan Car Company, the Detroit Car Wheel Company, the Michigan Forge and Iron Company, and the Detroit Pipe and Foundry Company, for four years and nine months ending September 30, 1891, and the Peninsular Car Company for five years ending December 31, 1891. They find that the net profits of these companies as shown by the books

for the above period, after charging all manufacturing and trading expenses, all repairs and renewals, depreciation of plant and machinery, and salaries, amount to \$4,334,295.97, or a yearly average profit of \$902,373.33. The new company will have a capital of \$8,000,000, divided into 50,000 shares of 8 per cent. cumulative preferred stock of \$100 each, and 30,000 shares of common stock of \$100 each. In addition to these shares \$2,000,000 first mortgage 5 per cent. 50 years bonds have been issued and have been subscribed for. One million dollars common stock remains in the treasury, and \$4,000,000 of the securities have been taken by the venders and their associates. Four million dollars of preferred stock are being offered to the public. The common stock will be entitled to a dividend of 12 per cent. per annum, payable in gold, after payment of the dividend upon the preferred stock, and to further annual dividends out of the net earnings of the company after a sum equal to 4 per cent. (\$80,000) per annum has been carried to surplus fund.

The Union Iron & Steel Company.

Last week at Youngstown, Ohio, a deal was consummated by which the interests of two of the largest iron and steel plants at that place have been consolidated under the name of the Union Iron & Steel Company, with a capital stock of \$1,500,000. The two plants referred to are the Enterprise Iron Works, operated by Cartwright, McCurdy & Co., Youngstown, Ohio, and the Youngstown Iron & Steel Company, operating the Trumbull Iron Company, at Girard, Ohio; the Youngstown Rolling Mill Company, at Youngstown, Ohio, and the Warren Iron & Steel Company, at Warren, Ohio. The project of consolidating the above firms under one management has been in process of formation for some time, but it was not until last week that the deal was finally completed and public announcement of the consolidation was made. At the time the matter was first taken under consideration it was the intention to include in the consolidation the plants of the Mahoning Valley Iron Company at Youngstown, the Andrews Bros. Company, Youngstown, operating the Haselton Works at Haselton, Ohio, and also the immense plant of the Brown-Bonell Iron Company at Youngstown. Each concern placed a valuation upon their plant, which in some instances was thought too high by others owning similar properties which were going into the deal, and in these cases mills whose valuation was considered too high were not included in the consolidation. That the above firms who have not at this time consolidated their interests with the Union Iron & Steel Company will eventually do so is very probable. The reason given for the consolidation of the interests of Cartwright, McCurdy & Co. and the Youngstown Iron & Steel Company is that these two firms have been sharp competitors for business, and that this move will do away with this feature, and also reduce the expenses incidental to management of two large concerns by placing all under one head. Cartwright, McCurdy & Co., in addition to operating the Enterprise Iron Works at Youngstown, also operate the Pomroy Rolling Mill at Pomroy, Ohio. The equipment of the Enterprise Iron Works consists of 42 single and 14 double furnaces, 10 heating furnaces and 10 trains of rolls; product, hoops, band, horseshoe iron, bar iron, guide iron, shapes and steel and steel cotton ties; annual capacity, 60,000 tons, while the Pomroy Rolling Mill is equipped with 14 single puddling furnaces, 4 heating furnaces and 4 trains of rolls; product, hoop,

band and refined iron, and steel cotton ties; annual capacity, 22,000 net tons. The equipment of the various plants of the Youngstown Iron & Steel Company is as follows: Girard Mill, at Girard, Ohio, equipped with 27 single puddling furnaces, 3 Smith regenerative gas heating furnaces and 4 trains of rolls; product, all sizes of bar iron and small T rails; special attention given to the manufacture of iron for chains, bolts, nuts and agricultural implements; annual capacity, 24,000 net tons. Warren Mill, at Warren, Ohio, equipped with 28 single puddling furnaces, 4 heating furnaces and 3 trains of rolls; product, bar and skelp iron, shafting, &c.; annual capacity, 20,000 net tons. Youngstown Mill, at Youngstown, Ohio, equipped with 28 single puddling furnaces, 2 Smith gas heating and 4 coal heating furnaces, 1 tire-straightening machine and 5 trains of rolls; product, bar, hoop, band, hame, box, tongue cap and tire iron and steel and cotton ties; annual capacity, 25,000 net tons.

The Pittsburgh Iron & Steel Engineering Company, Lewis Block, Pittsburgh, Pa., have been awarded the contract for the erection of the new Bessemer steel plant to be built by the National Tube Works Company, at McKeesport, Pa. The main equipment of the plant will consist of two 8-ton Bessemer converters, a 34-inch blooming train, one pair of 36 x 48 inch reversing engines, a compound blowing engine with two 52 x 60 inch blowing cylinders and three five-hole raking pit furnaces. The converting house will be so arranged that the casting will be done on cars and stripping will be done by the same methods as are in practice at the Edgar Thomson Steel Works and also at the Sparrow Point plant of the Maryland Steel Company. The new plant will be located adjacent to and just south of the two Monongahela blast furnaces of the Monongahela Furnace Company, owned by the National Tube Works Company. The direct method of conveying the molten metal will also be used. The soaking pit furnaces will be charged and drawn by means of an electric crane, and a second electric crane will be built over the blooming train for use in changing rolls and doing other work. No expense will be spared by the National Tube Works Company in the erection of this plant, and it is the intention to thoroughly equip the plant with the most modern appliances that can be secured. When completed the plant will have a capacity of about 500 tons of Bessemer Steel every 24 hours. This product will be used in the manufacture of pipes and tubes, of which the National Tube Works Company are the largest manufacturers in this country. Work on the erection of the plant will be commenced in a short time, and it will be pushed to completion as rapidly as possible.

Early in the morning of the 5th inst. the tinning house of the St. Louis Tin Plate Works was discovered to be on fire. An alarm was immediately sounded, and notwithstanding the efforts of the fire department the building was soon a mass of ruins. The fire was caused by overheating one of the tinning pots. The loss will be about \$15,000. F. G. Niedringhaus, president of the company, was on the ground a few hours after the fire had started, directing the workmen who were clearing away the debris. He stated that they would commence the work of rebuilding at once. They are at present building an addition to their cold-rolling house, which will contain ten additional mills, which will be used for sheet rolling. When the structure is completed they will be in position to turn out over 700 boxes of tin plate daily.

MANUFACTURING.

Iron and Steel.

The extensive improvements and additions now being made to the plant of the Midland Steel Company at Muncie, Ind., are rapidly nearing completion, and it is expected the plant will be in operation within a very short time. The equipment of this plant consists of one 24 gross ton open-hearth steel furnace, seven heating and three annealing furnaces and three trains of rolls, consisting of one blooming mill and two 24-inch trains. The product of the plant will be open-hearth steel tin-plate bars, and their capacity when operations are commenced will consist of 100 tons of tin-plate bars, and their melting capacity will amount to 200 tons every 24 hours. This firm realizes the already large and growing demand for bars for rolling down for tin-plate purposes, and will soon be in a position to furnish the trade the above amount. The entire plant is equipped with the most modern machinery, and when completed they will have one of the best appointed steel plants in the country.

On July 26 the Fort Payne, Ala., Coal and Iron Company will hold a special meeting to consider issuing bonds to provide sufficient money to pay all the debts and provide working capital, also to consider the sale of the company's franchises and property and the removal of the plant to Harriman, Tenn.

The Philadelphia Furnace, the property of the Florence, Ala., Cotton and Iron Company, which was blown out some time ago for repairs, will soon resume operations. Great improvements have been made in the plant and it will employ 150 men.

The new stack of the furnace being erected by the Jenifer, Ala., Iron Company is completed and they are now putting in two stoves made by Riter & Conley of Pittsburgh, Pa.

Last week the Talladega, Ala., Iron and Steel Company sold their furnace to William J. Parrish, 35 Wall street, New York City, for \$140,000. The furnace has been idle some time, but it is now understood that the plant will be put in operation at once.

The Vanderbilt Furnace at Birmingham, Ala., closed down on the 7th inst.

A special meeting of the stockholders of the Woodstock Iron Company, Anniston, Ala., will be held on July 5, to act upon a plan of reorganization which has been agreed to by the bondholders.

Furnace F of the Carnegie Steel Company, Limited, at Braddock, Pa., which has been undergoing repairs for some time, was blown in last week. The height of this stack has been raised to 80 feet, to make it correspond with furnaces H and I. The entire furnace plant of the Carnegie Steel Company, Limited, consisting of nine stacks, is in successful operation, eight of them making Bessemer iron, and the other spiegel.

The partnership heretofore existing between Jno. H. Dalzell, C. C. Arensburg and H. E. Dubarry, under the firm name of McCulloch, Dalzell & Co., crucible manufacturers, at Pittsburgh, has been dissolved by mutual consent, H. E. Dubarry retiring. The business will be conducted under the firm name of McCulloch, Dalzell & Co. at the same location by the surviving partners, John H. Dalzell and C. C. Arensburg.

National City, Cal., has raised \$70,000 of the \$100,000 necessary to secure an iron plant for that place.

Hughes & Patterson of Philadelphia will shortly erect four rolling mill buildings at a cost of about \$100,000. One is to be two stories in height, 40 x 253 feet, and the others to be one story and 40 x 296, 120 x 155 and 75 x 157 feet respectively.

The factory, machine shop and saw mill of the Tremont Nail Company, at West Wareham, Mass., have been totally destroyed by fire, involving a loss of \$100,000.

The furnace plant of the Ashland Iron Company, at Ashland, Md., has been sold to Poulter & Co. of Philadelphia for \$29,100. The purchasers will dismantle the furnace, sell the old iron on hand, and place the real estate on the market. The furnace was at one time leased by the Pennsylvania Steel Company, but has been idle for some time.

Machinery.

The Ashton Valve Company of 271 Franklin street, Boston, Mass., announce that they have bought the entire plant, material and business of the Boston Steam Gauge Company, together with a series of valuable patents, and have consolidated the business of the latter company with their own. They will manufacture all

classes of steam pressure and vacuum gauges, hydraulic gauges, water pressure and ammonia gauges, and will be sole manufacturers of the Boston patent steam gauge.

The Berlin Machine Works of Beloit, Wis., are building a three-story addition to their establishment. Its size is 200 x 66 feet, and it will be of brick with mill construction.

The American Steam Fire Engine Company, Seneca Falls, N. Y., are progressing nicely. They recently shipped another steamer of the Silsby pattern to Philadelphia. The company look with pride on the service rendered by their engines at the big fire in Philadelphia which occurred some time ago. At that time 20 Silsby steam fire engines worked continuously for 11 hours without a break or delay. Twenty-seven Silsby machines are now in active service in the Philadelphia fire department.

The new Twelfth street works of Fraser & Chalmers, Chicago, have so far advanced toward completion that in a short time the foundry and boiler shop will be ready for use. These departments will be housed in separate buildings, equipped with the most modern appliances. Traveling cranes and other machinery will be operated by electricity. The plant will comprise six buildings in all. The construction of the remaining four buildings will proceed as rapidly as the plans of the company will permit, but it is expected now that the greater part of two years will elapse before the machine shop and finishing departments are completed. It is the intention of the company to make their new works as complete as possible in all their appointments, and very great care will be taken in working out the details. Electricity will be employed as a motive power to a greater extent than it is now known to be used in any other works in the country, and it may be necessary to conduct experiments on quite an elaborate scale to guard against expensive mistakes. Under the circumstances the company are at present disinclined to publish full particulars of the plans which they propose to adopt in building the new plant. The old Fulton street works are now crowded to their utmost capacity in meeting the demand for mining machinery, and the new works will be erected none too soon to meet the necessity for increased manufacturing facilities.

The Lodge & Davis Machine Tool Company announce that on May 27 they transferred their entire interest and good-will, heretofore claimed in all pulley lathes, as advertised and illustrated, to the Ohio Machine Tool Works, Wm. Lodge proprietor.

The Holly Company of Lockport, N. Y., have been awarded the contract to furnish Towaunda, N. Y., with pumps of the most approved make to furnish 2,000,000 gallons of water a day. They will cost about \$21,000.

The Rakes machine shops at Lockport, N. Y., have been sold to Edward Le Van for \$4000.

The Berlin Machine Works, at Beloit, Wis., will erect a three-story factory, 200 x 66 feet, of brick, to cost \$31,000.

The Automatic Rapid Lathe Company have been organized at Saco, Maine, with a capital stock of \$250,000, for the purpose of manufacturing and dealing in machinery.

The Webb City Foundry, at Carthage, Mo., has been destroyed by fire.

The National Pipe Bending Company of New Haven, Conn., manufacturers of the National Feed-Water Heater, of which they have sold over 500,000 horse-power in the last ten years, report among the recent sales as follows: Three of 1500 horse-power, one of 1600 horse-power, three of 800 horse-power, five of 500 horse-power, two of 650 horse-power, six of 400 horse-power, one of 1000 horse-power, 17 of 200 horse-power, nine of 300 horse-power, 11 of 150 horse-power, and a large number of smaller sizes, 100 horse-power and less.

Stephen Nicholson has retired from the Nicholson & Waterman Mfg. Co., Providence, R. I., and the business will be continued under same name by Stephen Waterman. This concern makes a specialty of boring machines, although a line of other machine tools is made.

J. R. Palmer will establish a foundry and machine shop at Bartow, Fla.

The Mason & Foard Company, Eddyville, Ky., are interested in the establishment of a foundry and machine shop at Princeton, Ky.

A foundry and machine shop is to be erected at Sulphur Springs, Texas, by R. S. Vanwey.

R. J. Bigga and associates will erect an extensive iron foundry at Bardwell, Ky.

The plant of the Trenton Foundry and Machine Works, Trenton, Tenn., has been sold to Ramsay, Owens & Co. They will enlarge the plant and operate it regularly.

Hardware.

The Canandaigua Tinware Company have been organized at Canandaigua, N. Y., with a capital stock of \$5000. The company will

manufacture the Queen Steamer, which is intended for cooking vegetables and meats and for canning fruits. The company are now putting in machinery and will soon be in active operation.

The White Sewing Machine Company, Cleveland, Ohio, have recently completed a large factory for the manufacture of machine screws with machines upon which they hold patents.

Miscellaneous.

The United States wire and Cable Company of Schenectady, N. Y., have been incorporated, with a capital of \$1,000,000, divided into \$100 shares. The object of the concern is to manufacture and sell wire, wire rope, cables, conductors of every kind for the transmission of electricity, and all wires used in connection with and for the use of electrical machinery, apparatus, and the building, installation and use of electric plants, to make and sell machinery, and the insulation and covering of wires, cables, conductors of and for electricity. This company have heretofore been identified with the Edison General Electric Company of Schenectady, and the manufacturing of the wires and cables has been done in the company's shops at that city. General-Manager Kruesi of the works says that the incorporation of the Wire and Cable Company will not materially alter the present arrangement. The work will continue to be done at Schenectady, and the change was made because of the increased business of the department and the desire to still further enlarge it. Additional machinery has been received and more has been ordered, which, when placed in position, will give work to an increased number of employees. It is safe to say that the business of the new company will in the near future demand the addition of new buildings to the works. The directors of the new company are: Benjamin E. Sunny, Chicago; Silas A. Barton, Boston; Samuel Small, S. Dana Greene, New York; John Kruesi, Schenectady.

The new shops of the Shepard Bridge Works Company of Havana, N. Y., will make a fine plant. The main building is 210 x 60 feet, and will have a wing of ample proportions at right angles. The interior will be supplied with derricks, tram cars and other paraphernalia for handling iron, arranged with a view to convenience and expediency. It is understood that at least 100 hands will be employed in the new shops.

The business of the Elmira, N. Y., Bridge Works is increasing rapidly. Their output will far exceed that of past years. They now employ 185 men daily, which is an increase of more than 40 over last year. Their output is now between 700 and 800 tons a month of finished material, and their trade has extended all over the country. After the concern get their new machinery in full operation they will be in the best possible shape for a largely increased business.

The Robinson Chilled Plow Works of Canandaigua, N. Y., have recently been obliged to double their number of employees and keep them at work 15 hours a day to fill orders.

The Southern Malleable Iron Company, Chattanooga, Tenn., will enlarge their plant by the addition of the machinery of the Hinson Car Coupler Company of Chicago. This company will hereafter manufacture the Hinson coupler.

The David Bradley Mfg. Company are building a six-story warehouse of pressed brick and stone, 61 x 150 feet, at 55 to 59 Jefferson street, Chicago. It will be used for storing and exhibiting agricultural implements, and will be equipped with freight and passenger elevators.

Contracts have been signed for the construction of shops for the Rock Island Railroad Company at Des Moines, Iowa, to cost \$125,000.

The Queen & Crescent Railroad has begun the construction of new shops at Meridian, Miss., to replace those destroyed by fire some months since. The structure will be of brick, 500 feet long, and will cost \$50,000.

M. V. Smith & Co., engineers and contractors, Times Building, Pittsburgh, have secured the contract for the erection of gas producers in the works of the Thompson Glass Company, at Uniontown, Pa. It is expected to have these producers finished by August 15.

The Cartwright Spring Works, at Louisville, Ky., have assigned. The liabilities are stated to be \$88,500 and the assets \$127,000.

Chamberlain, Turney & Baird of Columbus, Ohio, report their June sales of pig iron to have reached 25,000 tons, being a very considerable advance on the figures for the previous months of this year. This is largely owing to the demand for raw material from Western agricultural implement makers.

TRADE REPORT.

The dominating factor for good or evil, as the case may be, in the Iron and Steel markets throughout the country, is the stoppage of the mills in the West and of a few works in the East. Our Pittsburgh report and the special advices printed elsewhere reflect the situation fully. There are indications pointing to a compromise between the manufacturers and the Amalgamated Association in the Iron mills, while some resumption on the part of the Steel works is expected at an early date, now that repairs are drawing to a close. The introduction of non-union men at Homestead is expected at every moment. The rumors of a stoppage at the Edgar Thomson and Duquesne plants of the Carnegie Steel Company are not given credence by representatives of the company here, because both concerns are non-union. The Edgar Thomson men got little sympathy from the Homestead contingent in their last struggle, and may not go into a sympathetic strike on that account alone.

The effect upon the general market throughout the country has been to keep Pig Iron dull and weak, while Finished Iron and Steel, notably in the West, have been strengthened and have advanced. This advance, however, covers merely immediate delivery, the situation having been taken advantage of by jobbers and by the few mills running. The idle works have been trying to take care of their contracts by buying in the local open markets, and have been forced to pay for the accommodation. Unless the strike continues much longer these advances are looked upon as merely temporary, and really possess little significance as yet.

Pig Iron production, according to our monthly report, shows a decline from 173,574 tons weekly on June 1 to 169,151 tons on July 1, but this is probably more than offset by the sharp reduction in the consumption since the first of the month. In all the markets the crude metal is very dull and shows a weakening tendency.

Steel Billets are quiet all around, the rush during the latter part of June having discounted the present state of affairs. The demands upon the Eastern mills have somewhat strengthened them, but the majority of buyers have their needs provided for for many months to come and in some cases for a whole year.

In Bars there has been an advance East and West for early delivery, and the same holds good on Beams and Structural Material. That it is not regarded as more than temporary is proven by the fact that one 1000 ton bridge contract was taken by an Eastern works at the lowest price on record.

Pittsburgh reports that a contract for 7000 to 8000 tons of Pipe is in the market, but while there has been considerable business lately, prices on Pipe are as low as ever.

Copper continues to weaken, and Tin records a decline of $\frac{3}{4}$ ¢ during the week. Lead is without strength.

Philadelphia.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, Pa., July 12, 1892.

There is no special change to note in the general position, and while prices are pretty firm on Finished Material, they are not higher than they were a week ago. The real key to the situation is that of demand, and although the unsettled condition of things in the West restricts production temporarily, there is plenty of stuff to go around, and likely to be plenty. An urgent and increasing demand would soon change the complexion of affairs; failing that, business moves along without any special change of feature, except some shifting of orders from one point to another. Consumers are less disturbed than they were a week ago, and on the whole things seem to be settling down, the trade being under the impression that there is nothing in the immediate situation to warrant more than trifling changes from prices recently ruling.

Pig Iron.—The market is extremely quiet, demand and supply being pretty evenly balanced. Sellers cannot force business, unless at more or less of a sacrifice in prices; neither can consumers place orders without paying something closer than usual to ordinary quoted rates. Considering the very heavy shrinkage in consumption during the past couple of weeks, this is considered a good showing, and promises well for a better market later on. Meanwhile neither buyers nor sellers are inclined to abandon their position of watchfulness, each waiting to see what will turn up next. A little extra demand or a little increase in supply might easily change the tone of the market, but which of these will come first, or how soon, it is impossible to say. A good deal of stuff has been taken recently, but the supply has been equal to all demands, hence the continuance of uniform prices. That is to say, uniformity as regards each brand or grade; but the market is anything but uniform in general quotations. Good No. 1 Foundry at \$15, No. 2 at \$14 and Gray Forge at \$13.25 @ \$13.50 are fair average prices, however, varying from the figures named to 50¢ or 75¢ less, according to brand, point of delivery, &c., or in detail as follows:

American Scotch, No. 1x.....	\$16.50	@	\$17.00
American Scotch, No. 2x.....	15.50	@	16.00
Standard Penna (Lake Ore), No. 1x.....	15.00	@	15.50
Standard Penna (Lake Ore), No. 2x.....	14.00	@	14.50
Standard Penna (Lake Ore), No. 2 plain.....	13.50	@	14.00
Medium Quality, No. 1x.....	14.50	@	15.00
Medium Quality, No. 2x.....	13.50	@	14.00
Standard Virginia, No. 1x.....	14.50	@	15.00
Standard Virginia, No. 2x.....	14.00	@	14.50
Medium Va. and Southern, No. 1x.....	14.25	@	14.50
Medium Va. and Southern, No. 2x.....	13.75	@	14.00
Standard Penna. and Virginia Forge.....	13.00	@	13.50
Ordinary Forge.....	12.50	@	13.00
Hot-Blast Charcoal.....	18.50	@	21.00
Cold-Blast Charcoal.....	24.00	@	26.00

Bessemer Pig.—There is not much demand, but small sales have been made at \$16.50 @ \$16.75, delivered, for standard qualities.

Low-Phosphorus Pig.—Sales in a small way at \$17.50 @ \$17.75, delivered, for 0.03 or less.

Ferromanganese.—Offered at \$59, duty paid, for 80 %, with a few small lots taken at about that figure.

Steel Rails.—The demand has been very disappointing, sales and deliveries being much below anticipations. There is nothing in the outlook to warrant much hope of improvement in the near future, and it is doubtful if last year's business will be exceeded, say 1,500,000 tons of standard sections. Light Rails are in pretty good demand, but at best business is not what was expected.

Steel Billets.—There has been a good deal of inquiry and some sales, but prices have not been what makers were figuring on—viz., over \$25 for Schuylkill Valley or equivalent points. Some sales may have been at \$25—some were at \$24.75—and there is no reason to doubt that orders could easily be placed at that figure to-day. There is more caution than usual, however, in making quotations, owing to the situation in Pittsburgh, but there is an evident disposition to sell at figures named, and with that a corresponding indifference on the part of buyers, for as usual they want material badly when they think they may not be able to get it, but don't want it near as bad when they see they can get all they are likely to need.

Muck Bars.—A little firmer feeling, but orders have been placed at \$24.50 @ \$24.75, delivered, for standard Bars, makers usually asking \$24.75 @ \$25.

Bar Iron.—Owing to the suspension of work at mills in the city and at some others in the vicinity, it is difficult to place orders at prices anywhere near what are satisfactory to buyers. Holders ask 1.75¢ @ 1.80¢, and as there was no difficulty in placing orders at 1.65¢ @ 1.70¢ a little while back, buyers do not respond very freely to an advance of that kind, believing that there will be plenty of Iron soon, at pretty near the old figures. Nevertheless, there is no alternative in the meantime but to meet sellers' terms, but only small lots are taken pending some disposition of the labor scale.

Skelp Iron.—There is quite a large inquiry, chiefly from the West, and it looks as though some good-sized orders would be placed at from 1.60¢ to 1.65¢, delivered, and for Sheared at from 1.75¢ to 1.80¢.

Plates.—A very good demand is reported and several rather important engagements have been made during the past few days. Some business has been transferred this way from Western concerns, so that for the time being mills are very well off for orders. There is nothing new, however, and anything like a general resumption of work would be very likely to exercise an adverse influence upon prices, but as resumption is somewhat uncertain, quotations for the present are steady and firm at about the following figures (delivered).

	Iron	Steel
Tank Plates.....	1.80 @ 1.90¢	1.80 @ 1.90¢
Shell.....	2.15 @ 2.20¢	2.15 @ 2.20¢
Flange.....	2.70 @ 2.90¢	2.40 @ 2.50¢
Fire Box.....	3.00 @ 4.00¢	2.70 @ 2.80¢
Special qualities.....		3.25 @ 3.75¢

Structural Material.—Mills are getting a considerable amount of work from points hitherto supplied from Pittsburgh, and to that extent business is better; but there is very little coming in from new consumptive sources, so that there is not much room for congratulation. Mills hereabouts are quite busy, however, with a fair probability of their continuing so during the balance of the year. Prices are firmer, perhaps a tenth higher on an average, but all depends on the size and character of order. General quotations about as follows, delivered: Angles, 1.80¢ @ 1.90¢; Universal or Sheared Plates, 1.85¢ @ 1.90¢; Beams and Channels, 2.15¢ @ 2.25; Tees, 2.20¢ @ 2.30.

Sheets.—There is a very good demand, and mills will probably be run to full capacity as soon as they get fairly under way. Prices are unchanged, but for best makes steady at about the following quotations:

Best Refined, Nos. 14 to 20.....	2.40¢ @ 2.60¢
Best Refined, Nos. 21 to 24.....	2.90¢ @ 3.00¢
Best Refined, Nos. 25 to 26.....	3.10¢ @ 3.15¢
Best Refined, No. 27.....	3.30¢ @ 3.40¢
Best Refined, No. 28.....	3.40¢ @ 3.50¢
Common, $\frac{1}{4}$ ¢ less than the above.	

Quotations given as follows are for the best Open-Hearth Steel, ordinary Bessemer being about 4¢ lower than are here named:

Best Soft Steel, Nos. 14 to 20 3¢ @ 3½¢
 Best Soft Steel, Nos. 21 to 24 3½¢ @ 3½¢
 Best Soft Steel, Nos. 25 to 26 3½¢ @ 3½¢
 Best Soft Steel, Nos. 27 to 28 3½¢ @ 4¢
 Best Bloom Sheets, ½¢ extra over the above prices.
 Best Bloom, Galvanized, discount.... @ 70 %
 Common, discount..... @ 72½ %

Old Material.—Owing to the suspension of works at mills during the past week or two, there is very little demand for Scrap, so that prices are more or less nominal, and dependent upon the urgency to buy or sell, as well as quality and point of delivery. Heavy Steel Scrap is in fair demand, but apart from that there is not much inquiry. General quotations about as follows: Iron Rails, \$19 @ \$20, delivered; Steel Rails, \$15 @ \$16, delivered; No. 1 Railroad Scrap, \$17 @ \$17.50, Philadelphia, or for deliveries at mills in the interior \$17.50 @ \$18, according to distance and quality; \$12 @ \$12.50 for No. 2 Light; \$12.50 @ \$13 for best Machinery Scrap; \$13 @ \$14 for Wrought Turnings; \$9 @ \$9.50 for Cast Borings, and nominally \$21 @ \$22 for Old Fish Plates, and \$14.50 @ \$15 for Old Car Wheels.

Wrought Iron Pipe.—Quotations cannot be given with much definiteness, as the feeling is very unsettled, prices depending on quantity, time of delivery, &c. Skelp is scarce and may be dearer, as there is some uncertainty as to the mills starting up, so that Pipe makers are not pushing business at present. There are no official quotations, but all the way from 5 to 10 % extra can be had from the following list:

Butt-Welded Black 57½ %
 Butt-Welded Galvanized 47½ %
 Lap-Welded Black 67½ %
 Lap-Welded Galvanized 55 %
 Boiler Tubes, 2½ inch and under 60 %
 Boiler Tubes, 3 to 6 inch 65 %
 Boiler Tubes, 7 inch and larger 55 %

Chicago.

(By Telegraph.)

Office of The Iron Age, 50 Dearborn street, 1
 CHICAGO, July 13, 1892.

The market for finished products is in an excited condition. Dealers carrying stocks here have experienced a very sudden demand from not only this immediate vicinity, but from distant sections. Monday's mails were very large, and they showed that numbers of heavy consumers have been caught short who usually buy in quantity direct from the mills. They had good notice that the mills were to be closed for some time, but as they had heard the same sort of talk in previous years they paid little attention to it. The consequence is that as they have been caught napping, some of them will pay dearly for their lack of belief in reports sent out of a great shut down of the mills. Stocks of all kind, Iron and Steel, here were in very good shape for such a demand, but, of course, they cannot stand a long continued pull. The advance in prices will be noticed under the separate headings in this report. Large contracts have been placed the past week for Bolts and Nuts by agricultural works. The decided change in the outlook for the crops, and the prospect for a very heavy yield in the greater part of the Northwest, have given increased confidence to the manufacturers of agricultural implements, who are now looking forward to a much heavier business than anything previously done.

Pig Iron.—The situation in Pig Iron cannot be called encouraging. The closing of so many Western mills as a matter of course cuts off a great deal of consumption. The competition here between the local Pig Iron manufacturers, and between them and the Southern iron companies, is

very strong for any business coming forward. Some of the local companies have been greatly favored during the past month by large orders from consumers with whom they had previous contracts. The others have done very little during the same time, and naturally feel restless under this condition of affairs. While we make no change in the quotation on local Iron, the situation is not reassuring, and the least that can be said is that prices show no stiffening tendency. The inquiry for Southern Coke Iron is light, but the sellers are endeavoring to secure orders at the very low rates noted last week. The manufacturers of Lake Superior Charcoal have been obliged to make concessions at last on large contracts. They sustained themselves manfully for a long time, but were at length obliged to yield to the prices named by heavy consumers. Within the past 30 days the sales of Charcoal throughout the entire Lake Superior district have been upward of 40,000 tons. Such sales should, in the ordinary course of affairs, improve the condition of the market, but this has not been the case. The price of Charcoal Iron is not a particle stronger than it was two weeks back, and other heavy contracts will likely be made at prices lower than we have been quoting. The market is not demoralized, however, as the ordinary buyers of Charcoal will be obliged to pay very close to our present quotations: Quotations are as follows, cash, f.o.b. Chicago:

Lake Superior Charcoal	\$16.50 @ \$17.00
Local Coke Foundry, No. 1	14.50 @ 15.00
Local Coke Foundry No. 2	14.00 @ 14.50
Local Coke Foundry, No. 3	13.50 @ 14.00
Local Scotch	15.00 @ 16.00
Ohio Strong Softeners	16.25 @ 17.00
Southern Coke, No. 1	15.00 @ 15.50
Southern Coke, No. 2	13.50 @ 13.75
Southern Coke, No. 3	13.15 @ 13.35
Southern, No. 1, Soft	13.50 @ 14.00
Southern, No. 2, Soft	13.25 @ 13.50
Southern Gray Forge	12.75 @ 13.25
Southern Mottled	12.75 @ 13.25
Tennessee Charcoal, No. 1	17.50 @ 18.00
Alabama Car Wheel	21.00 @ 23.00
Coke Bessemer	15.50 @ 16.00
Hocking Valley, No. 1	17.00 @ 17.50
Jackson County Silvery	17.00 @ 17.50

Spiegeleisen.—The Spiegel market is unchanged and prices steady.

Bar Iron.—A great deal of figuring is now being done on annual contracts. Inquiries are also in the market for a considerable quantity of Car Iron, for which the demand is increasing. Sales of carload lots for immediate delivery are going on very steadily by small mills and non-union establishments which are still at work. The supply from these mills, however, falls far short of the requirements of consumers who ordinarily purchase directly from the mills. Quotations on small lots are now hovering about 1.65¢, Chicago, half extras; the valley mills are quoting 1.50¢ @ 1.55¢ at mill for delivery after the mills start up again. Soft Steel Bars show the effect of the recent competition for large orders, and can now be had in carload lots from mill at 1.65¢, Chicago, or a trifle less. Jobbers, under the impulse of the heavy demand for Bar Iron from stock, have advanced prices to 1.90¢ and 2¢, half extras. They propose also to stop cash discounts and charge their customers net rates, 30 days. Soft Steel Bars from stock are quoted at 1.90¢ @ 2.10¢, which is a wider range than usual and is intended to meet the increased demand coming from a number of new customers.

Structural Iron.—Orders are being received by dealers from a very wide section of country. They have advanced their price from stock to 2.25¢ @ 2.50¢, finding that even at the higher price consumers are very glad to be able to get what they can. If the present demand continues, the stocks here will be very decidedly depleted in a short time. The mills able to take orders are now quoting 2.25¢, Chicago, for mill shipmen's. Angles are quoted at 2.10¢ @ 2.25¢ and

Tees at 2.49 @ 2.50¢, from stock, with also a heavy demand from various quarters.

Plates, Tubes, &c.—The condition of the mills causes a much better demand from stock and prices are very firmly maintained. So far as known there is but one Plate mill in operation in Pittsburgh and that mill, and the Eastern mills are being greatly benefited by the stoppage of the Western mills. Tank Steel has advanced to 2.15¢, Chicago, from mill.

Sheets.—Quotations on Black Sheets are now ranging from 2.95¢ to 3.05¢, Chicago, from mill, for No. 27 common. This is a decided advance on the price recently ruling, and not many mills are in shape to undertake early delivery. Jobbers are discouraging sales by their men for future deliveries, believing that they will shortly be able to get a better price than their recent quotation of 3.20¢ from stock for No. 27. Stocks on Galvanized Iron are getting very short in the warehouses here, especially for 30-inch Sheets. Small lots of Juniata are selling at 67½ and 5 % to 70 % Mill prices have stiffened up to 70 and 5 %.

Merchant Steel.—During the past week not much has occurred of any special character in this line. A good demand is experienced from stock, but contracts have not been placed to any great extent. Mill quotations for Open-Hearth Machinery, Spring and Tire Steel are unchanged at 2¢ @ 2.25¢, Chicago. Dealers quote from store Open-Hearth Spring Steel, 2.50¢; Tire, 2.25¢ @ 2.30¢; Crucible Spring, 3.50¢ @ 4¢; Crucible Machinery, 4.50¢ @ 5¢; Tool Steels, 6.50¢ @ 8¢ and upward, according to quality.

Billets and Rods.—Manufacturers are awaiting developments. They are receiving numerous inquiries for Rods, and if the mills shut down a little longer the stock in hand will soon be used up, and prices are then expected to advance. The nominal price of Billets is still \$34.50, and Rods \$34.50, but manufacturers are not disposed to take contracts at these prices at present, preferring to wait to see what the result will be at Pittsburgh.

Rails and Track Supplies.—With the improved crop outlook there is a very much better feeling in the Rail trade, and manufacturers are confidently expecting a larger business than they had anticipated for a short time back. No particulars can be ascertained with regard to new orders now being received. Prices are firm at \$31 and upward for standard sections, according to quality. Iron and Steel Splice Bars are unchanged at 1.70¢ @ 1.80¢, Track Bolts with hexagon nuts at 2.60¢ @ 2.70¢, and Spikes 2.10¢ @ 2.15¢.

Old Rails and Wheels.—Sales of Old Iron Rails are reported at \$17.50 in the interior of the State. Dealers here quote \$17.75 nominally, but report transactions very light. Old Steel Rails are quiet, with \$14 quoted for long lengths and \$12.50 for short pieces. Very little business doing in Old Wheels, which are nominally worth \$14.50.

Scrap.—The local forges are buying some Wrought Scrap, and the small mills in Indiana are doing a little business in the same line, but with the large mills so generally closed, there could not be even a fair volume of trade. Cast is moving steadily. Steel is dull. The Bernstein yard was sold on Friday at sheriff's sale to A. Feltenstein, who is not in the Scrap business, for \$15,000. The purchase covers the lease of the yard, sheds, teams and some 2500 tons of stock, principally Mill Scrap. As the purchaser is a capitalist, the stock will hardly be sacrificed, but will be sold to the best advantage. Dealers quote selling prices as follows, per net ton: No. 1 Railroad, \$16 @ \$16.50;

No. 1 Forge, \$15 @ \$15.50; No. 1 Mill, \$11; Pipes and Tubes, \$11; Horseshoes, \$16; Sheet Iron, &c., \$7; Cast Borings, \$5.75; Wrought Turnings, \$8; Axle Turnings, \$9.50 @ \$10; Machinery Cast, \$11.50 @ \$12; Stove Plate, \$9; Malleable Cast, \$10; Car Axles, \$18.50 @ \$19; Fish Plates, \$17.25; Mixed Steel, gross ton, \$10.50 @ \$11; Coil Steel, \$15; Leaf, \$16.50, and Tires, \$15.

Metals.—Copper is quiet, with Lake quoted at 12¢ for carloads and 12 25¢ for smaller quantities, while Casting Copper sells at 11 1/2¢ for carloads and 11 1/4¢ for small lots. Spelter is in good demand, spot stock seems to have been sold up entirely, and the quotation for August delivery is 4.75¢ firm for carloads. The Pig Lead market is much quieter, but values have held their own at 4.15¢. Brokers say they have never seen such unanimity among the Lead producers as to prices, and while rumors are current of concessions, yet they find no one willing to sell. The market closed at 4 1/2¢ bid and 4.15¢ asked.

J. S. Brewer, 176 and 178 Van Buren street, Chicago, has been appointed Chicago representative of Dilworth, Porter & Co., Limited, of Pittsburgh, manufacturers of Railroad Spikes. Mr. Brewer has made a specialty of railroad supplies for many years and enjoys a very wide acquaintance with the trade.

Pittsburgh.

Office of The Iron Age, Hamilton Building, Pittsburgh, July 12, 1892.

The exciting events at Homestead since our report of last week, and which are fully set forth elsewhere in this issue, have served to keep the people here in a state of intense excitement, and as a natural result have interfered very seriously with the transactions of regular business. On Wednesday of last week, the day on which the battles occurred between the strikers and the Pinkerton detectives, business was almost entirely suspended, and it was hard to find anybody who was not anxiously endeavoring to get the very latest news from the scene of conflict. Since that date matters have quieted down very much, but the labor troubles at Homestead continue to engross the public mind. The shut down of the mills on account of the refusal of the manufacturers to sign the Amalgamated Association scale for 1892-93 has caused a stoppage in buying in nearly everything connected with the Iron and Steel trades. Many people have left the city for the various pleasure resorts in the belief that there will be little business done until a general resumption of operations among the idle mills has taken place. The shut down of the mills has caused a scarcity in some lines of finished material, and this has been followed by higher prices. Raw material, however, under pressure to sell, has weakened, but with no sales going on which prices for the different grades can be based.

Pig Iron.—The past week has been extremely quiet and transactions were confined to a few small lots, ranging from 100 to 500 tons each. Notwithstanding the fact that there is little buying being done, the furnacemen do not show any inclination to cease operations until a market can be found for their product. As a result stocks are again being increased very fast, and the outlook for any improvement in the Pig Iron trade is decidedly gloomy. Of the 26 stacks in Allegheny County all are active but two, these being Soho of the Moorhead McCleane Company and one Eliza stack of Laughlins & Co. During the month of June these 24 active stacks made 147,368 tons of 2240 pounds of Pig Iron. The few sales of Bessemer now being made are

based on \$14, delivered at mill, but a buyer with a good round lot to place could shade that price without trouble. In Foundry and Gray Forge Irons the situation is no better and prices quoted below would be shaded on large lots. We quote as follows:

Neutral Gray Forge.....	\$12.50 @ \$12.75, cash
White and Mottled.....	12.25 @ 12.50, "
All-Ord Mill.....	12.50 @ 12.75, "
No. 1 Foundry.....	14.25 @ 14.50, "
No. 2 Foundry.....	13.25 @ 13.50, "
Bessemer Iron.....	14.00 @ 14.50, "
Cold-Blast Charcoal.....	23.50 @ 24.00, "

We are advised of only one transaction in Pig Iron since our last report that involved any considerable amount. This was a sale of 4000 tons of Bessemer, equal deliveries in August, September, October and November, at \$14, delivered at buyer's mill.

Ferromanganese.—The shut down of the Steel plants has caused a very perceptible falling off in the demand for Ferromanganese, and but little is changing hands. The few sales going are made at prices ranging from \$61 to \$61.50 for domestic. We are not advised of any foreign being sold here for some time.

Soft-Steel Billets.—The past week has been extremely quiet, and we are advised of only two or three unimportant transactions. The desperate efforts made by buyers to cover their wants previous to the shut down of the Steel plants on July 1 has resulted in but few orders being placed since the above date. As far as Pittsburgh is concerned, it is probable that two Soft-Steel plants will continue in operation right along regardless of the shut down of the other mills. One of these is the Bessemer plant of the Hainsworth Steel Company in Pittsburgh and the other is the plant of the Allegheny Bessemer Steel Company, at Duquesne, Pa., operated by the Carnegie Steel Company, Limited. In the Wheeling district but one plant is in operation, and it will probably continue running right along. While these three plants can do but little to supply the demand as we usually find it, they can, however, take care of all the business now going without any trouble. The recent sharp advances which took place during the latter part of June have not been maintained, and Billets for prompt delivery are available at \$23 @ \$23.25, f.o.b. at makers' works. As yet not a single concern making Soft-Steel Billets has signed the Amalgamated Association scale, but now that repairs in some of the plants are well forward one or two signatures within the next week or ten days are not improbable.

Steel Rails.—It is understood that a large order is in the market, but definite information concerning it is not available here. We understand, however, that Pittsburgh is reasonably sure of securing at least a portion of it. The Edgar Thomson mill is well fixed for business, having booked a considerable number of orders early in the year. Prices remain unchanged, and we continue to quote \$30, f.o.b. at mill, for standard sections.

Structural Material.—The shut down of the three plants here making Structural Shapes has taken Pittsburgh out of the active market for the time. The tragic events at Homestead last week have been well ventilated in newspapers all over the country. A point that was made against the firm was the fact that for a long time Beams and Channels were sold at 3 1/2¢ @ lb. It might have been well perhaps had the person who charged the Carnegie Steel Company, Limited, with making an exorbitant profit on Structural Shapes also stated that in order to keep their large Beam mill at Homestead in full operation they were compelled to buy out the allotments of a number of other firms and pay handsome prices in order to secure these allotments. While it is generally admitted that there was an immense profit in

Beams and Channels before the dissolution of the Beam Association, it must not be forgotten that in order to market their product at these prices, the above firm were compelled to pay handsomely for the privilege. In addition to this, the equipment of the Homestead plant represents an outlay of hundreds of thousands of dollars, which will require the marketing of thousands of tons of Beams and Channels before the original cost of the plant has been returned to the firm. While we understand that prices both east and west of Pittsburgh have shown a firmer tendency on account of the shut down, we repeat our quotations for this market as they appeared last week, as follows: Beams and Channels on a basis of 1.90¢ @ 1.95¢ for desirable orders and 2¢ @ 2.05¢ for small lots; Angles, we quote at 1.80¢ @ 1.90¢; Universal Mill Plates, Steel, 1.80¢ @ 1.90¢; Universal Mill Plates, Iron, 1.75¢ @ 1.80¢; Tees, 2.35¢; Refined Iron Bars, 1 7/8¢ @ 1.75¢; Steel Bars, 1 7/8¢ @ 1.75¢; Sheared Bridge Plates, 1.95¢ @ 2.05¢.

Steel Plates.—The firmer tendency in prices noted last week continues, and in some cases actual advances have been secured. As far as Pittsburgh is concerned, but few orders are being received, and these continue to be taken subject to stock and ability to procure material. We repeat our quotations of last week, as follows: Flange, 2¢ @ 2.10¢; Fire Box, 3 5/8¢ @ 3.75¢; Shell, 2¢ @ 2.10¢; Tank, 1.75¢ @ 1.85¢, f.o.b. Pittsburgh.

Merchant Steel.—The shut down of the mills has seriously affected business and makers are declining to book contracts until the labor troubles have been arranged. All orders now being booked are subject to ability to fill from stock. A fair number of desirable orders are in the market, but will not be closed up until the wage scales have been arranged. We quote as follows: Crucible Spring Steel, 3.75¢ @ 4.25¢; Crucible Machinery Steel, 4.50¢ @ 5.50¢; Open-Hearth Spring, Tire and Machinery Steel from 2¢ to 2.40¢, according to grade. Tool Steel from 7¢ up, according to quality.

Wire Rods.—There is comparatively nothing doing, and this state of affairs will no doubt continue until well up to August 1. Two signatures to the Rod-rolling scale have been secured by the Amalgamated Association, these being the Carnegie Steel Company, Limited, for their Beaver Falls mills, and the Oliver & Roberts Wire Company. Two other Rod mills in Pittsburgh, while paying Amalgamated Association prices for Rod rolling, do not recognize that organization, their mills being operated non-union. We quote the market at \$31.50 @ \$32, f.o.b. at makers' mill.

Muck Bar.—There is nothing doing whatever, and diligent inquiry failed to reveal but one transaction in Muck Bar since our report of last week. We continue to quote at \$24.50 for very best grades, delivered at buyers' mill. Inferior grades are obtainable at a price slightly less than the above.

Wire and Cut Nails.—The few plants now in operation have had the effect of causing a great scarcity in supply and this has led to a decided stiffening in prices as far as Pittsburgh is concerned. It is probable that the two mills here will continue in operation right along and also the Beaver Falls mills, of Carnegie Steel Company, Limited. We quote prices at \$1.60 @ \$1.70 in carload lots, \$1.70 @ \$1.80 in less quantities. As soon as a general resumption has taken place in Wire Nail mills it is probable that prices will again decline to their former level. The reason for this is that with the immense capacity for production of Wire Nail mills, it is almost impossible to keep the market from

being overstocked, which naturally leads to low prices. In Cut Nails the situation has changed very little. While there has been a general shut down of the mills, the demand for some time has been very small, and it is thought what few orders are going can be filled without trouble from stocks in hands of makers. Prices have shown a slight tendency to advance, but we repeat our quotations of last week, being \$1.50 @ \$1.55 in carload lots, f.o.b. at factory in Mahoning Valley and Wheeling districts.

Barb Wire.—It is understood that the large orders booked some months ago have been generally filled and mills, as a rule, are booking new business with the distinct understanding that orders will be filled subject to the ability of the makers to obtain Steel. Should the Steel plants continue closed for some time, causing scarcity of this material, an advance in prices of both Painted and Galvanized Wire will undoubtedly result. We quote the market at \$2.25 @ \$2.35 for Painted, and \$2.65 @ \$2.70 for Galvanized, f.o.b. at factory.

Skelp Iron.—The great scarcity of Skelp Iron noted in our issue of last week continues, and this material can hardly be obtained at any price. The large order for Pipe in the market mentioned elsewhere will require about 7000 tons of Skelp Iron. Unless a resumption of the mills occurs very soon there is a probability that Steel will be substituted for Iron, and in any event it is probable that Steel will be used for at least part of the order. We quote Skelp Iron at 1.70¢ @ 1.75¢ for Grooved and 1.85¢ @ 1.90¢ for Sheared, four months, or 2% off for cash.

Manufactured Iron.—On Monday of this week the seventh meeting between the Pittsburgh manufacturers and the Conference Committee of the Amalgamated Association was held in the Ferguson Building in this city to confer on the wage scale. It is probable that considerably more progress would have been made looking to the formulation of a new wage scale had it not been for the riots at Homestead last week. The exciting events taking place there demanded the presence of a number of the head officials of the Amalgamated Association, and for this reason but little was done at the three conferences held in Pittsburgh last week. Now that matters have quieted down at Homestead, owing to the introduction of State troops to guard the works, it is believed that considerable progress will be made this week between the Pittsburgh manufacturers and the Amalgamated Association. A conference was held Monday in the Ferguson Building, which was in session from about 2.30 p.m. until 6.30 p.m. We understand that, while no parts of the scale have been finally adopted, the outlook for a peaceful settlement of the differences existing is much brighter now than at any time since the old scale expired. There are many in the trade who believe that if the Pittsburgh manufacturers can secure a reduction on prices paid for labor to the skilled workmen in the mills they will consent to continue to pay \$5.50 per ton for bolting. The fact that puddled Iron is being rapidly displaced by Soft Steel leads to the belief that the Pittsburgh manufacturers will not insist on their original intention of reducing the wages of puddlers, as this class of labor cuts a very small figure, comparatively speaking, in the pay roll. It seems certain, however, that a determined effort will be made to reduce the wages of rollers and heaters, which are admitted on all sides to be out of proportion to wages paid to other classes of labor. The manufacturers in the Mahoning and Shenango valleys seem to have dropped out of sight altogether, as not a single conference has been held

between the Bar-Iron makers of those places and the Amalgamated Association since the original conference held in Pittsburgh during the latter part of June. Attempts were made several times to arrange for a conference at Youngstown, but something always intervened to prevent the conference being held. The outlook now is that a conference with the Mahoning and Shenango Valley manufacturers will not be held until the scale has been arranged with the Pittsburgh manufacturers. Another meeting of the two Conference Committees is to be held in this city to-day (Tuesday), when something may be done looking to the settlement of the scale for another year. The shut down of the mills has caused sharp advances in all kinds of finished material, and in addition a great scarcity. Some few old orders remain to be filled. Mills generally are refusing to make any contracts until the new scale is arranged. New orders coming in are being accepted, subject to stock and ability to fill them. Prices have advanced very materially on No. 1 Bars, and we quote these at 1.70¢ @ 1.75¢. In some cases makers claim to have secured as high as 1.80¢ @ 1.85¢, where they had the Iron to sell. Bars made from Old Rails and Scrap have also shared in the advance, and quotations are ranging from 1.60¢ to 1.75¢; No. 24 Sheet we quote at 2.65¢ @ 2.70¢, all 60 days, 2% off for cash.

Wrought-Iron Pipe.—We are informed that a large order for Pipe, aggregating between 7000 and 8000 tons, is in the market. The inability to secure Skelp Iron, however, has prevented this order from being accepted up to this writing. Should the scarcity of Skelp Iron continue, it is not improbable that Steel will be substituted for Skelp Iron in filling it. A considerable number of orders have been booked by Pipe and Tube makers within the last 30 days, and the situation as far as business is concerned shows considerable improvement. Contrary to expectation, however, prices have not shown any material strengthening, and the official discounts of the Wrought Iron Pipe and Tube Manufacturer's Association continue to be shaded very materially.

Old Rails.—The shut down of the mills has stamped out effectually what little buying was being done previous to July 1. Inquiry among several of the large dealers in this city in Old Rails failed to reveal a single sale of Old Rails of any consequence since our last report. In such a condition of affairs we can only make nominal quotations, which are as follows: Old Steel Rails, which do not require sorting, \$15.75 @ \$16; miscellaneous lengths we quote at \$15 @ \$15.25 and long lengths at \$15.50 @ \$15.75.

Scrap Iron and Steel.—The same remarks made regarding Old Rails apply equally well to Scrap Iron and Steel. There is next to nothing doing, and a few sales made within the past week or two were at prices which are almost beyond belief. A sale of No. 1 Wrought Scrap is reported at \$13, net, delivered at buyers' mill. As in the case with Old Rails, we can only make nominal quotations, which are as follows: No. 1 Railroad Wrought Scrap, \$13.50 @ \$14 per net ton; Cast Scrap, \$10 @ \$10.50 per gross ton; Billet and Bloom Ends, \$15 @ \$15.50; Cast-Iron Borings, \$8.50 @ \$7 per gross ton; Mixed Country Steel, \$12 per gross ton; Railroad Coil Springs, \$17 @ \$17.50 per gross ton; Leaf Springs, \$19 @ \$19.50; Old Steel Axles, \$19 @ \$20; Machinery Cast Scrap, \$11 @ \$11.50 per gross ton.

Arthur Holland of Naylor & Co., iron and steel factors, Lewis Block, Pittsburgh, Pa., who has been in Europe for the past two months, returned home last week.

Mr. Holland combined business with pleasure, and reports having had a very enjoyable time in his travels through the lands on the other side of the Atlantic.

Cleveland.

CLEVELAND, OHIO, July 11, 1892.

Iron Ore.—Sales of non-Bessemer Ore during the past week have been made on the basis of a 25¢ cut from last season's prices. In some instances the quotations prevailing in 1891 have been shaded 40¢ per ton. Buyers seem, however, to be shunning the market except in isolated instances where a particular grade of Ore is needed to complete a certain stock. Freight rates continue in the buyers' favor and the vesselmen are still unable to obtain more than 70¢ per ton for bringing down Ore from Escanaba, and \$1.10 per ton from the head of Lake Superior. New Ore is still being sent down from the mines in liberal quantities. Over 80,000 tons were unloaded on the Cleveland docks last week, a gain of 18,000 tons over the receipts for the same week last year. Movements to the furnaces have also brightened up again and the shipments into the valleys last week were almost as heavy as in the corresponding week in 1891. It is believed that 3,000,000 or 3,500,000 tons of new Ore will be sold before the close of the season, and the prices now being obtained are not unlikely to prevail for several months to come. Some inquiry for non-Bessemer Hematites is noted, but buyers do not seem willing to pay within 30¢ or 40¢ per ton as much as was obtained for the same grades of Ores last year. Estimates of the amount of Ore sold to date vary from 3,750,000 to 4,250,000 tons. If 40,000 or 50,000 tons of any kind of ore were to be sold to-day it is probable that last season's prices would necessarily be cut 30¢ or 35¢ per ton.

Pig Iron.—The market is entirely devoid of features. No sales of any consequence whatever are reported and none are anticipated for the present. Industrious inquiry at all the leading headquarters fails to reveal anything beyond here and there an unimportant purchase for immediate delivery, and at bed rock quotations. Nominal quotations are as follows:

Nos. 1 to 6 Lake Superior Charcoal	\$17.50 @ \$18.05
Nos. 1, 2 and 3 Bessemer, per ton.	15.00 @ 15.20
No. 1 Strong Foundry, per ton.	15.00 @ 15.50
No. 2 Strong Foundry, per ton.	14.00 @ 14.50
No. 1 American Scotch, per ton.	15.00 @ 15.50
No. 2 American Scotch, per ton.	14.00 @ 14.50
No. 1 Soft Silvery, per ton.	15.50 @ 16.50
Mahoning and Shenango Valley Neutral Mill Irons, per ton.	13.50 @ 14.00
Mahoning and Shenango Valley Red Short Mills, per ton.	14.00 @ 14.50

Nails.—The market is not very active, although there is a fair demand, especially for Steel Wire Nails, which are still quoted at \$1.70 per keg in stock. Steel Cut Nails continue at \$1.65 per keg, in great or small quantities.

Barb Wire.—Although the mills seem well supplied with orders, trade is not very brisk. Farmers seem to be considerably discouraged over their inability to get in their usual crops, and are loth to incur expenses that can possibly be avoided. Prices are not very firm at \$2.70 for Galvanized and \$2.35 for Painted.

Old Rails.—There is very little demand even at \$19 @ \$19.25 for Old Americans.

Scrap.—The market continues dull and only an occasional sale is reported. No. 1 Railroad Wrought is quoted at \$16.25 @ \$16.50, with few, if any, buyers. Other quotations are given out as follows: Cast Scrap, \$12 @ \$12.25; Wrought Turnings, \$11 @ \$11.50; Cast Borings, \$8 @ \$8.50; Machinery Cast, \$11.25 @ \$11.75; Car Axles, \$17.50 @ \$18.

Old Wheels.—Very little is being done. Sellers ask \$14 @ \$14.50, but there are few, if any, inquiries.

Manufactured Iron.—The market lacks the buoyancy that characterized it last month. Common Bar is still quoted at 1.60¢ @ 1.65¢, but business is slack.

Cincinnati.

(By Telegraph.)

Office of *The Iron Age*, Fourth and Main Sts.,
CINCINNATI, July 13, 1892.

The market for Pig Iron has been very quiet during the week, and while there is no essential change in quotations, and it appears to be steady on the surface, there is an undertone of easiness, not to say weakness, the tendency being in favor of buyers. There is about the usual buying of small lots, seldom running as high as 500 tons, and complaint is made that there is much cutting of prices even on those. There are some furnaces in need of money that are offering to make concessions, and even the stronger Iron companies are not so strenuous in demanding prices which they would not accept a short time ago. No large trading is reported, and if any has occurred it was at prices which the parties interested were not willing to acknowledge. The labor troubles at Homestead do not appear to have had any essential effect upon prices in this district, but it is certain that the market has not been benefited by them. It is hoped that the report of production and of stocks on July 1 will be encouraging to the furnaces, but there is such an abundance of Pig Iron obtainable that any essential improvement in the market seems to be as far off as ever. Quotations are as follows:

Foundry.		
Southern Coke, No. 1.....	\$13.50 @	\$13.75
Southern Coke, No. 2.....	12.50 @	13.00
Southern Coke, No. 3.....	12.00 @	12.50
Ohio Soft Stone Coal, No. 1.....	16.00 @	16.50
Ohio Soft Stone Coal, No. 2.....	15.00 @	15.50
Mahoning and Shenango Valley.....	16.60 @	17.25
Hanging Rock Charcoal, No. 1.....	19.75 @	20.00
Hanging Rock Charcoal, No. 2.....	19.00 @	19.50
Tennessee and Alabama Charcoal, No. 1.....	16.50 @	17.00
Tennessee and Alabama Charcoal, No. 2.....	15.50 @	16.00
Forge.		
Gray Forge.....	11.50 @	12.00
Mottled Neutral Coke.....	11.25 @	11.50
Car Wheel and Malleable Irons.		
Standard Southern Car Wheel.....	18.75 @	19.00
Lake Superior Car Wheel and Mal- leable.....	17.75 @	18.00

St. Louis.

Office of *The Iron Age*,
Bank of Commerce Building,
St. Louis, July 11, 1892.

Pig Iron.—Extreme quietness prevails in this department. During the week under review sales were limited to quantities running from carloads to 100-ton lots for prompt shipment. Prices do not show any improvement whatever, and in some directions sales have been made which indicate a disposition to shade the prices at present quoted. This was unlooked for, as it was pretty generally believed that they had reached bottom, and it seemed out of the question for them to go lower. At the moment, however, the immediate future of prices is extremely uncertain, although the advantage seems to be on the side of still lower prices. There does not appear to be anything in the situation to warrant any improvement whatever, and the labor troubles in Pittsburgh and other parts of the country will only further demoralize the market. The outlook, therefore, is extremely discouraging, and buyers who will purchase their supplies from hand to mouth will, no doubt, have reason to be satisfied with themselves before the summer months are over. The tendency of the market for some time has been downward, and now that the labor troubles are assuming a serious phase, still further declines are probable. For ordinary

quantities we quote as follows for cash, f.o.b. St. Louis:

Southern Coke, No. 1 Foundry.....	\$13.75 @	\$14.00
Southern Coke, No. 2 Foundry.....	13.00 @	13.50
Southern Coke, No. 3 Foundry.....	12.25 @	12.75
Gray Forge.....	12.00 @	12.25
Southern Charcoal, No. 1 Foundry.....	15.25 @	15.75
Southern Charcoal, No. 2 Foundry.....	14.75 @	15.00
Missouri Charcoal, No. 1 Foundry.....	14.00 @	14.50
Missouri Charcoal, No. 2 Foundry.....	13.50 @	14.00
Ohio Softeners.....	16.75 @	17.00

Bar Iron.—The rather decided labor movement in the Pittsburgh district has caused a general uneasiness in this locality, so far as finished material is concerned. Mills are inclined to ask full prices and jobbers have already set the pace by advancing their prices. Stocks are not heavy, and should the labor troubles be of long duration, it is hard to anticipate just where values will go. Mills quote 1.65¢ @ 1.67½¢, half extras, East St. Louis. Jobbers quote 1.75¢ for lots from store, at which price they are very firm.

Barb Wire.—Business does not improve much, even at the lower prices adopted two weeks since. This is the dull season and mills do not anticipate any large trade until the summer months have passed. Mills quote as follows: Painted, \$2.30; Galvanized, \$2.75. Less than car lots 10¢ p.cwt. additional. Terms 60 days, or 2 % discount for cash.

Wire Nails.—A fairly satisfactory trade is reported at the recent advanced price. Mills quote \$1.75 for any quantity, and at this price the market is quite firm. Some mills refuse to accept orders at less than \$1.80, and the impression prevails that still higher prices will shortly be in order.

(By Telegraph.)

Pig Lead. The improvement noted last week was of short duration, and holders who were asking 4.10¢ at that time are now selling at 4.05¢. The demand is slow, and there is little likelihood of any large movement. Either way, a fairly steady market at prices prevailing to-day will likely continue during the present month.

Spelter.—Remains in about the same condition as last reported. The demand is only moderate and offerings at 4.55¢ do not result in business. The immediate future does not contain much that is encouraging, and the volume of business does not compare very favorably with last year.

Louisville.

LOUISVILLE, KY., July 11, 1892.

Very little Iron has been wanted in this territory during the past week, but that little was sold at prices never recorded here before. Surely the "false bottoms" have all been knocked out and the "bed rock" struck at last.

During the usual midsummer shut-down whatever differences existed in regard to wages in this immediate section have been adjusted, and the mills will all start up on Monday.

The shutting down of the mills at Homestead will cause an increased demand from the West, but even if troubles there are quickly settled, the opinion is gaining ground that there will be plenty of work for all.

We quote for cash, f.o.b. cars, Louisville:

Southern Coke, No. 1 Foundry.....	\$13.50 @	\$14.00
Southern Coke, No. 2 Foundry.....	12.50 @	13.00
Southern Coke, No. 3 Foundry.....	12.00 @	12.50
Southern Coke, Gray Forge.....	11.25 @	11.75
Southern Charcoal, No. 1 Foundry.....	15.75 @	16.75
Southern Car Wheel, standard brands.....	18.00 @	19.00

New York.

Office of *The Iron Age*, 96-102 Reade street,
NEW YORK, July 13, 1892.

Pig Iron.—This market is very quiet, although quite a fair run of orders has followed the announcement of the Thomas Iron Company, whose new prices, however, apply only to July and August deliveries. There has been some talk of sales of Reading Iron at \$13.25 for No. 2. This is part of a lot of 3000 to 4000 tons of Iron which has been stored at Perth Amboy for some time and is pronounced in the trade to be off quality. We understand that it is in second hands, and was bought at the time when the company were in trouble. Sales of it are not considered indicative of the market in the trade. We quote Northern brands at \$15 @ \$15.50 for No. 1; \$14 @ \$14.50 for No. 2; \$13.50 @ \$13.75 for Gray Forge, tidewater. Southern Iron, same delivery, \$14.25 @ \$15 for No. 1; \$13.50 @ \$14.50 for No. 2 and No. 1 Soft; \$13 @ \$13.50 for No. 2 Soft; \$12.50 @ \$13 for Gray Forge.

Ferromanganese and Spiegel.—There is no business to report. Ferro is nominally \$59 for 80 % at tidewater.

Billets.—There is some inquiry for Billets at \$24.50 @ \$25, delivered.

Manufactured Iron and Steel.—There have been sales of Bars at an advance of about one tenth of a cent a pound, and local Beam mills are charging a sharp advance on business which does not come to them from regular customers. The latter are being supplied at the o.d. prices. Little new business has come up. As indicative of the future we may write that 1000 tons of Bridge work for a railroad were taken this week at an exceedingly low figure. A well-equipped and well-situated works put in a bid at cost, and yet found that they were undercut 8 %. Nominal prices, subject to concessions on good specifications, are as follows: Beams, 2.25¢ @ 2.65¢ for small lots and 2.15¢ @ 2.50¢ for round lots, according to sizes; Angles, 1.85¢ @ 2¢; Sheared Plates, 1.8¢ @ 2.25¢; Tees, 2.30¢ @ 2.75¢; Channels, 2.25¢ @ 2.50¢, on dock. Car Truck Channels, 2¢ @ 2.10¢. Steel Plates are 1.8¢ @ 1.9¢ for Tank; 2¢ @ 2.25¢ for Shell; 2.30¢ @ 2.65¢ for Flange; 3.5¢ @ 2.75¢ for Marine, and 3¢ @ 3.25¢ for Fire Box, on dock; Refined Bars are 1.7¢ @ 1.9¢, on dock; Common, 1.6¢ @ 1.65¢. Scrap Axles are quotable at 2¢ @ 2.10¢, delivered. Steel Axles, 2¢ @ 2.1¢, and Links and Pins, 2.05¢ @ 2.20¢; Steel Hoops, 1.90¢ @ 2¢; Cotton Ties, 85¢ p bundle, delivered.

Track Material.—The market is very dull, with quotations as follows: Spikes, 1.90¢ @ 2¢, delivered; Fish Plates, 1.55¢ @ 1.60¢, at mill; Track Bolts, square nuts, 2.50¢ @ 2.60¢, and hexagon nuts, 2.70¢ @ 2.80¢, delivered.

Metal Market.

Copper.—The weakness that has appeared beneath the surface of late is now more conspicuous. In fact, the "nominal" prices quoted by certain leading producers have become farcical and open market values as reflected in late sales would appear to more clearly reflect actual value. On the Metal Exchange about 150,000 lb of Lake Superior Ingot have been sold at 11½¢ @ 11.30¢, net cash, and elsewhere sales were noted at 11½¢ and a shade less on regular terms. Common Casting Copper is freely offered at 10½¢ and could probably be obtained at a fraction under that price. Business in this market has been of very moderate volume. The demand is running behind previous calcula-

tions as well, and the general experience is doubtless disappointing. In some quarters it is intimated that the depression is at least partly due to forced sales made for effect and that a turn for the better is likely to take place ere long, but that consumers' purchases are disappointing is patent, however, and that fact is not without effect. There was a sale on the Exchange on Wednesday of 25,000 lb Lake Ingot at 11.20¢, but 11½¢ was subsequently bid outside for 100,000 lb without leading to business.

Pig Tin.—The movement of prices has been steadily downward, and a decline of about ¼¢ is to go on record for the week, transactions having taken place at as low as 20.45¢. Speculative liquidation is responsible for the decline in a great measure, and the selling appears to have been the result of too heavy concentration of stock latterly in the hands of a few operators. On the decline considerable Tin has been taken by dealers who were previously very cautious and by consumers, leaving supplies in rather better shape, although still very heavy. Probably 500 tons have changed hands during the week, including 25 tons said to have been taken for reshipment to London, presumably for delivery on "short" sales made latterly in that market. At the close the market was slightly firmer, with 21.55¢ apparently an inside rate for spot stock in 10-ton or larger lots for prompt delivery.

Pig Lead.—The outbreak at the Cœur d'Alene mines has had no perceptible influence upon the market. To the contrary, prices have weakened slightly under the influence of more reserved purchases by consumers and realizations in the place of additional purchases by speculators, not only here but at Western points. In this market probably 500 tons have been sold at 4.15¢ @ 4.20¢, with latest dealings at the lower price, and at the close 4.15¢ appeared to be full value for other than small parcels for immediate delivery.

Spelter.—There has been some irregularity in prices for spot stock, yet no radical change, and the situation of the market remains practically the same as it was a week ago. Eastern demand is almost wholly for single carload lots at present and purchases by Western galvanizers have fallen considerably, leaving a spiritless condition of affairs for the time being. For prompt delivery sales have been made at 4.80¢ @ 4.90¢, according to brand. Future shipments are generally quoted at 4½¢ @ 4.80¢ for popular brands.

Antimony.—Business has been almost wholly of a jobbing nature, and prices still lean more or less in buyers' favor. Current quotations are 10½¢ @ 10¾¢ for Hallett's and 14¢ @ 14½¢ for Cookson's, according to quantity.

Tin Plate.—The demand for all varieties has been very quiet. Shortage in the pack of various lines of canned fruit and vegetables is reflected in extremely moderate purchases of cokes, but requirements for other purposes seem to be hardly up to the July average. That fact, together with tariff legislation, prompts very cautious movement on the part of buyers, and future deliveries are faring quite as poorly as spot goods. We quote as follows for full weights: Coke Tins—Penlan grade, IC, 14 x 20, \$5.25; J. B. grade, do., \$5.37½; Bessemer do., \$5.25; light weights, 100-lb, 10¢ less; 95-lb, 20¢ less; 90-lb, 30¢ less than full weight; Siemens Steel, \$5.37½. Stamp- ing Plates—Bessemer Steel, Coke finish, IC basis, \$5.60 @ \$5.65; Siemens Steel, IC basis, \$5.75 @ \$5.80; IX basis, \$6.80. IC Charcoals—Melyn grade, ½ X, \$6.40; for each additional X add \$1.50; Allaway grade, \$5.75; Grange grade, \$5.85; for each additional X add \$1.20. Charcoal Terns—Wor-

cester, 14 x 20, \$5.75; do., 20 x 28, \$11.45; M. F., 14 x 20, \$7.37½; do., 20 x 28, \$15.25; Dean, 14 x 20, \$5.45; do., 20 x 28, \$10.80; D. R. D. grade, 14 x 20, \$5.35; do., 20 x 28, \$10.40 @ \$10.45; Mansel, 14 x 20, \$5.30; do., 20 x 28, \$10.45; Alyn, 14 x 20, \$5.45; do., 20 x 28, \$10.65; Dyffryn, 14 x 20, \$5.65; do., 20 x 28, \$11. Wasters—S. T. P. grade, 14 x 20, scarce; do., 20 x 28, \$10; Abercarne grade, 14 x 20, scarce; do., 20 x 28, \$9.80.

Coal Market.

There is little or no Anthracite Coal selling at the latest advance, which had the effect only to intensify the previous dullness usual at this season of the year. Whether the fact is simply a coincidence or a result, the situation is one that excites much criticism of the methods of the combine. Not only is the so-called advance mythical for the present, but no improvement in prices can be expected until the large lots of Coal still afloat at June prices are disposed of, and these are slowly absorbed. For example, a firm that had 40 cargoes has about 12 left, which are offered at a premium, on account of demurrage, to make the dealer whole, with his commission. Outside of the combine are two independents, who are selling a shade lower, at about the following quotations: Chestnut, \$3.90 @ \$4.10, f.o.b., and Stove, \$4.15 @ \$4.25. Lehigh Egg is scarce, and prices are more variable. Production for the week ending July 2 was 1,033,098 tons, compared with 753,759 tons in the corresponding week last year, an increase of 279,339 tons. The total mined since January 1 is 19,638,238 tons, an increase of 1,264,001 tons.

The Pennsylvania Railroad reports for the year thus far 6,904,000 tons of Coal, an increase of 62,000 tons. Reading for the week reports 425,000 tons, of which 108,000 tons were sent to New York depots. Vessel freights from New York to Boston and discharge, 65¢ @ 80¢.

The shipments of Coal over the Reading system from January 1 to July 2, 1892, are reported at 14,863,597 tons, an increase of 1,015,038 tons over the same time last year.

In Bituminous Coal there is no change, but an improvement is looked for the coming fall.

The State Senate Committee to inquire into the advance in the prices of Coal held one session and adjourned to July 21, when President McLeod may be present.

Financial.

The strongest feature in the general business outlook is the promising condition of the crops, as shown by the Government report just issued. A wheat crop of at least 225,000,000 bushels seems to be assured, as advices from several of the more productive States hold out expectations much above the Government estimates. An aggregate of 575,000,000 against the unprecedented yield of 612,000,000 bushels last year is supposed to be reasonable. Kansas and Missouri will both do better than last year. In the most advanced regions the harvest is already in progress. The cotton crop is put down at 6,700,000 bales, the smallest in four years. The first bale has been received in Houston, Texas. The condition is 86.9 July 1, against 88.6 last year. Naturally prices have declined about 7½¢ for wheat within the past month and about 1½¢ for cotton. Another favorable circumstance is the cessation of gold exports. Labor troubles have a disquieting effect, but the Homestead lockout is recognized as a temporary difficulty which may result in permanent advantages. The treatment of the

silver question in Congress is severely reprobated. Henry Clews attributes to the unwise measures attempted in Congress the general stagnation that has invaded almost all undertakings, business men being intimidated.

The stock market was generally strong, being favorably influenced by purchases for European account and by rebuying to cover short contracts, stimulated by very favorable news regarding the crops, and there was a less nervous feeling concerning the Free-Silver bill. Among the features were the postponement of the suits against the Reading and the declaration of a 2% cash dividend on Louisville & Nashville.

United States bonds were quoted as follows:

U. S. 4½s, 1891, extended.....	100
U. S. 4s, 1907, registered.....	116½
U. S. 4s, 1907, coupon.....	116½
U. S. currency 6s.....	106

Money was more active. Lenders of money on time offered it freely, but stipulated for good Stock Exchange collateral. Rates were 2½% for 30 to 60 days, 3% for 90 days, 3½% for four to five months and 4% for six months. The demand for commercial paper was confined to the interior, and rates were firmer at 3¼ to 3½% for 60 to 90 day indorsed bills receivable. The bank statement showed a loss of \$3,479,000 in cash and of \$2,509,575 in surplus reserve, leaving this item at \$15,577,025. While the Federal Treasury is weak in gold, the country itself is strong, as remarked by the president of the Chemical Bank.

The demand for bonds was improved, and sterling exchange became dull and easy at \$4.87½ @ \$4.89. Rates no longer favor gold shipments.

The record of the foreign commerce of New York for the last fiscal year is complete and shows for June the largest total in the annals of the past, the imports having been \$46,911,201 and the exports \$51,907,173. The shipments of specie from this port in June were \$2,000,000 larger than for June of last year, and the exports of produce and merchandise show a gain of \$3,500,000. The total imports at New York for the year were \$576,837,000, and the exports \$484,793,000. The recent gain in exports, exclusive of specie and bullion, is particularly gratifying. If other ports have done as well relatively, the balance of trade is heavily in our favor.

The exports of cotton for two months were rated at \$250,055,000, or \$33,500,000 less than during the same time last year. The quantity exported was 2,000,000 lb more.

Imports.

Hardware, Machinery, &c.

Awkam, H. & Co., Mach'y, pgs., 12
Baker, Hermann & Co., Arms, cs., 16; Hardware, cs., 4
Columbia Lace Works, Mach'y, cs., 29
Coppil, Alex., Ironware, cs., 7
Curley & Bro., Hardware, cs., 2; Cutlery, cs., 1
Downing, R. F. & Co., Cutlery, cs., 16; Hardware, cs., 19; Cycle Parts, pgs., 29; Bicycles, cs. and crates, 58
Field, Alfred & Co., Cutlery, cs., 21; Hardware, cs., 7; Anvils, 70
Goodwin's Sons, Samuel, Gun Barrels, cs., 5
Hahn, Randolph C., Agate Ware, cs., 4
Kastor, A. & Bros., Cutlery, cs., 3
Kastor, Ad. & Co., Ironware, cs., 30
Knauth, Nachod & Co., Ironware, cs., 10
Markt & Co., Hardware, cs., 4
Midvale Steel Company, Steelware, cs., 67
Oastler, N. C., Mach'y, pcs. and pgs., 14
Pollock, C., Cutlery, cs., 3
Radway & Co., Mach'y, cs., 2
Suzarte & Whitner, Mach'y, cs., 42
Schloss & Sons, Mach'y, cs., 11
Steinhardt & Bro., Arms, cs., 5
Vom Cleff & Co., Steelware, cs., 5
Ward, Jas. E. & Co., Hardware, cks., 4
Werlemann, H., Arms, cs., 21
Wyman, C. H. & Co., Arms, cs., 6
Wiebusch & Hilger, Arms, cs., 19; Hdw., pkgs., 14
Zinsser, Wm. & Co., Mach'y, cs., 10

British Iron and Metal Markets.

[Special Cable Dispatch to The Iron Age.]

LONDON, WEDNESDAY, July 13, 1892.

Scotch warrants have attracted more attention, but the speculation is still tame, and prices have undergone little change. In Cleveland there has been little doing since "bear" accounts were squared, and the price has remained almost stationary. Hematites are dearer, owing to continued decrease in stocks. Exports of Pig Iron last month were 75,000 tons, against 73,000 tons in June, 1891. There are now 117 English furnaces blowing. Stocks in Connal's stores include 420,000 tons Scotch and 35,000 tons Cleveland. Latest sales of warrants were at 41/3 for Scotch, 40/3 for Cleveland and 49/ for Hematites.

Straits Tin has declined about £4 during the week. At the start there were good purchases of forwards that imparted confidence for a time, but subsequent realizations, along with heavier arrivals and free deliveries, and reports from America of probable abolition of the proposed duty, had a depressing effect. Spot stocks are moderate at present.

Low prices led to somewhat freer purchases of Copper early in the week for both speculative account and consumption, but weaker American and Continental advices caused a cessation of demand, and the market became easier.

The Tin-Plate market has undergone no change. Cokes are in fair demand, chiefly for Russia and San Francisco, but Terns and Charcoals are neglected. Exports last month were 34,000 tons, of which 23,000 tons to America. In June, 1891, the total was 71,000 tons, including 63,000 tons to America.

Steel Ship Plates are now offered at £6 and the market is rather weak.

Scotch Pig Iron.—Some modification of prices of a few brands has been made, but the general line is unchanged and business continues quiet.

No. 1 Coltness, f.o.b. Glasgow.....	53/
No. 1 Summerlee, " ".....	51/6
No. 1 Gartsherrie, " ".....	50/6
No. 1 Langloan, " ".....	50/6
No. 1 Cambro, " ".....	44/
No. 1 Shotts, " at Leith.....	51/
No. 1 Glengarnock, " Ardrossan.....	50/
No. 1 Dalmeilington, " ".....	46/6
No. 1 Eglinton, " ".....	46/

Steamer freights, Glasgow to New York, 1/; Liverpool to New York, 7/6.

Cleveland Pig.—Dealings have been on a moderate scale, but the offering is more reserved, and makers now ask 40/6 for No. 3 Middlesborough, f.o.b.

Bessemer Pig.—There has been no change in prices, and the market is slow. Makers quote 50/ for West Coast brands, Nos. 1, 2 and 3, f.o.b. shipping port.

Spiegeleisen.—A quiet business and former prices asked. English 20 % quoted at 77/6, f.o.b. shipping port.

Steel Rails.—Dealings are still on a moderate scale and at about former prices. Heavy sections quoted at £4. 2/6, f.o.b. shipping port.

Steel Billets.—The market remains very quiet, with sellers' prices unchanged. Bessemer, 2½ x 2½ inches, quoted at £4. 5/, f.o.b. shipping port.

Steel Blooms.—The market remains very quiet. Makers quote £4 for 7 x 7, f.o.b. shipping point.

Steel Slabs.—Business slow and the market flat. Bessemer quoted at £4. 5/, f.o.b. at shipping point.

Old Iron Rails.—A moderate business passing at about former prices. Tees quoted at £2. 17/6 and Double Heads at £3, f.o.b.

Scrap Iron.—There is little doing and sellers name former prices. Heavy Wrought Iron quoted at £2. 10/ @ £2. 12/6, f.o.b.

Crop Ends.—The market very quiet and unchanged. Bessemer quoted at £2. 12/6 @ £2. 15/, f.o.b.

Manufactured Iron.—No improvement in the demand in any department and prices barely steady. We quote, f.o.b. Liverpool:

Staff. Ordinary Marked Bars	8 10 0 @	£ s. d.	£ s. d.
" Common	6 5 0 @	6 7 6	
Staff. Bk Sheet, singles	7 5 0 @		
Welsh Bars (f.o.b. Wales)	5 10 0 @		

Tin Plate.—No change in character of business or demand. Prices without decided change. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade	14/6 @	15/
IC Bessemer Steel, Coke finish	12/6 @	12/9
IC Siemens	12/9 @	13/
IC Coke, B. V. grade 14 x 20	12/6 @	
Charcoal Terne, Dean grade	12/ @	12/3

Pig Tin.—Market closed rather quiet but firmer at £95. 5/ @ £95. 7/6 for spot, and £95. 2/6 @ £95. 5/ for three months' futures.

Copper.—Market quiet at the close, but steady. Merchant Bars quoted at £44. 10/6, spot, and £45 three months' futures. Best selected, £48. 10/.

Lead.—Business has been moderate, but the market is steadier at £10. 10/6 for Soft Spanish.

Spelter.—Demand slow and the market easy at £21. 10/ for ordinary Silesian.

Detroit.

WILLIAM F. JARVIS & Co. of Detroit, Mich., under date of July 11, 1892, writes: There can be no doubt but that the large season purchases of Lake Superior Charcoal Iron have been made, as a thorough canvass of all the large buyers shows them to be covered for all ordinary wants of this grade of metal for the current year. It will be interesting to see how far the large stocks in the hands of the makers have been depleted. There should be a decided improvement in the Lake Superior Iron trade, a number of furnaces having stated their intention of blowing out as soon as their present supply of Ore, Charcoal, &c., shall have been exhausted. Prices can safely be said not to have varied 50¢ per ton this season, and to day a purchaser would obtain the same figures or a trifle better, even, than those named to the first buyers, when unsold stocks showed over 100,000 tons, the variation of even the 50¢ named being due to conditions of delivery and terms of settlement. In Foundry and Forge Irons a little more activity has been seen, one large buyer in the local market having placed orders for about 3000 tons during the past week. The smaller carload and less than 100 ton business remains unchanged. The closing of Carnegie's mills has given local agents of other mills a number of orders to replace those unfilled at Homestead. With a quiet market, we quote the following list of prices:

Lake Superior Charcoal, all numbers	\$16.50 @	\$17.50
Lake Superior Coke, Bessemer	16.00 @	16.50
Lake Superior Coke Foundry		
all ore	16.00 @	17.00
Ohio Blackband (40 per cent.)	16.50 @	17.00
Southern No. 1	15.00 @	15.50
Southern Gray Forge	13.25 @	13.50
Jackson County (Ohio) Silverv.	17.75 @	18.25

Washington News.

(From Our Regular Correspondent.)

WASHINGTON, D. C., July 12, 1892.

The consideration in conferences between the committees of the two Houses of Congress of the disagreeing votes on that portion of the Naval Appropriation bill relating to additional ships for the Navy evolved some significant information from expert sources. The Senate Committee, which had made a material increase over the House provisions for new ships by adding battle ships, cruisers, gun and torpedo boats, receded to the extent of cruisers and gun and torpedo boats and forced the representatives of the House to consent to an additional battle ship, making two.

There appears to be some question as to the wisdom of building any more unarmored cruisers at present, as the navy is well equipped with this class of vessels in proportion to the number of armored battle ships and armored cruisers. It is proposed for the next year or two to devote the larger share of attention to the more formidable class of warlike vessels. As for gunboats and torpedo boats, they are generally small craft, and in event of war could be quickly built, whereas, on the other hand, a battleship involves three to five years' time for construction and from \$3,000,000 to \$5,000,000 outlay.

In the line of this sound logic the Senate insisted upon and the House agreed to two armored battle ships. This will make an addition of fighting strength to the navy. The Texas, which was built from English designs purchased by Secretary Whitney from British builders, is very unsatisfactory, to express the situation mildly. Experts call it a failure. Our own designs for vessels of the same class are vastly superior in seaworthiness and fighting power, offensive and defensive. The anglophobes on the subject of the British Navy, and the supposed superiority of these ships over our own, will have their idle noise very emphatically stopped by the object lesson of the British model Texas. The Maine, which is American throughout, will not only show the superiority of American naval experts over British, but will be far ahead of any vessel in the British Navy.

The opinion is expressed by competent authorities that the new American navy, when all the ships now authorized are completed, will have such an advantage in design, armor, armament and machinery that the available British navy would not be able to cope with it on anything like equal chances.

The fragmentary free-trade raid of the House upon the existing protective policy has reached its culmination for the present in the passage of the bills for free iron ore, tin plate, &c.

The Senate Committee on Finance will now take up the subject and make their report, which will be a thorough vindication of the tariff act of 1890, after a practical test of its workings. It is not probable that any action will be taken in the Senate on these bills. The adverse answer on the House free trade bills and the report of the majority against them is regarded as sufficient to cover the whole ground in making the issue between the two great political parties and for campaign purposes.

There is a desire to adjourn as soon as possible in order to go into the work of the campaign, which will be hotly contested on the great issues and shorn of sensational effects, personalities and scandals. The rival reasoning and rhetoric on the lines of protection vs. tariff reform will never have been so thorough and instructive to the people.

HARDWARE.

Condition of Trade.

NOTWITHSTANDING the fact that this is generally regarded as perhaps the duller part of the year, a fair amount of business is doing and a good feeling characterizes the trade. There is already some inquiry by the large buyers for goods required next season and we are advised that some good orders have been placed. There is a general expectation that business during the fall will be good, notwithstanding the fact that it is Presidential year. In the matter of prices there is little new to report, the market, however, being somewhat affected by the labor agitation. Manufacturers in quoting on large lots of staple goods are careful to cover the contingency of strikes or higher prices on the raw material, and are in many cases accepting orders for early delivery only up to the capacity of their works. While it is hoped that there will not be any serious difficulty in regard to labor matters, the uncertainty which characterizes the situation is recognized. The general prosperity which prevails throughout the country leads to the expectation that business will be of good volume, and the satisfactory condition of finances in mercantile circles tends to produce a more confident feeling than has prevailed during the past few months.

Chicago.

(By Telegraph.)

The demand for Shelf Hardware opened up handsomely this week. Monday's orders were unusually heavy, doubtless caused by the very fine weather of the past week. This is ordinarily the duller time of the year and vacations are in order, but the broken weather of the past two months interfered so seriously with the usual course of trade that much of it must come now. Building is very active throughout the Northwest, causing a heavy demand for building materials. The jobbers in Heavy Hardware are now reaping some benefit from the closing of so many of the Western rolling mills. Those who laid in largest stocks of Bar Iron and Steel are the best satisfied. Prices are advancing at least \$3 per ton above the low level of May and June. Wrought Pipe is in active demand, but prices are very low, card rates being wide of the mark.

St. Louis.

(By Telegraph.)

We are now passing through a portion of what is usually the duller period of the year, and this year is no exception. Between vacations and early closings the

working forces are somewhat divided and the volume of business is naturally curtailed. Jobbers are just now making their preparations for the fall trade, which promises to be unusually heavy. The crop outlook is more than promising and the Western States will be rich fields to work both for the manufacturer and jobber. Jobbers who carry stocks of Manufactured Iron are uneasy regarding the outcome of the labor troubles and find prices advancing the longer they delay placing their orders. Local trade is in good shape and collections very satisfactory.

Notes on Prices.

Cut Nails.—The demand for Cut Nails is light and the volume of business, as usual at this season, small. The supply is somewhat curtailed by the stoppage of a number of the mills and the diminished production of others. Manufacturers are pursuing a conservative course and are not pushing for business. They are also indisposed to accept orders for future delivery except with a proviso by which they are protected against the contingency of strikes, &c. In the matter of prices the market is otherwise without change. Quotations in the East are still on the basis of \$1.55 at mill for Steel Nails on 30-cent average, with equalization of freight, Iron Nails being 3 cents a keg less. On lots of 1000 kegs an abatement of 5 cents a keg is made.

Chicago, by Telegraph.—The central Indiana mills have again been making low prices on Steel Cut Nails, but only in odd lots, and not for regular trade. Other manufacturers quote \$1.57½ @ \$1.60 on 30-cent average. The supply of 8, 10, 20 and 30 penny is now very short with so many mills closed, and prices should be firmer instead of weaker. Jobbers report a fair demand, but not heavy, at \$1.70 @ \$1.75 from stock.

Wire Nails.—The market for Wire Nails is in a somewhat improved condition, and quotations are perhaps a shade stronger than at our last report. Some of the leading mills are stopped for the usual midsummer repairs and alterations, and it is understood that in some cases their capacity will be increased. As a general quotation \$1.60 for round lots, at mill, fairly represents the market, though some of the manufacturers decline to make this figure. Small lots from store in New York are held at \$1.85.

Chicago, by Telegraph.—The Wire-Nail manufacturers report a good inquiry. Repairing is now in progress at most of the factories, and few of the large concerns will be started up before August 1. Higher prices are so confidently predicted that the impression obtains lodgment that the

manufacturers have some reason for what they say. One of the largest buyers in this market was unable last week to get a quotation under \$1.70 on a fair-sized order. Jobbers are enjoying a heavy demand, especially for small sizes and Finishing Nails, caused by the activity in building. They quote \$1.75 from stock.

Barb Wire.—The Barb Wire market is dull and inactive. There is no quotable change in price, but the tone of the market is not quite so strong. Current prices are represented by the quotation of \$2 62½ to \$2.65 on Four-Point Galvanized at mill. Small lots from store in New York are held at \$3.10, with 10 cents off in carloads.

Chicago, by Telegraph.—Barb Wire is quiet, manufacturers quoting \$2.30 and jobbers \$2.40 for Painted, with the usual advance on Galvanized.

Saws.—Henry Disston & Sons, Philadelphia, announce a reduction in the price of their Hand Saws, the discount being now 25 per cent., instead of 20 per cent., as heretofore. A similar change has been made in the prices of Woodrough & McParlin, whose Hand Saws are now quoted at 30 per cent. discount, and by Wheeler, Madden & Clemson Mfg. Company, whose discount is now 35 per cent. The quotations of Richardson Bros. and C. E. Jennings & Co., we are advised, remain unchanged.

Scandinavian Padlocks.—The manufacturers of Scandinavian or Jail Padlocks have been revising their list prices. The Russell & Erwin Mfg. Company, New York, issue a sheet containing the following revised list prices on these goods, which are subject to a discount of 50 per cent.:

No.	Page.	With two keys. Per dozen.
600.....	550.....	\$3.40
601.....	550.....	4.20
602.....	550.....	5.00
603.....	550.....	6.00
650.....	552.....	2.50
651.....	552.....	3.00
652.....	553.....	3.75
653.....	553.....	4.75
660.....	552.....	2.75
661.....	552.....	3.25
662.....	553.....	4.00
663.....	553.....	5.00
690.....	552A.....	2.30
1600.....	551.....	3.80
1601.....	551.....	4.75
1602.....	551.....	5.70
1603.....	551.....	6.65
1650.....	554.....	2.75
1651.....	554.....	3.25
1652.....	555.....	4.00
1653.....	555.....	5.00
1660.....	554.....	3.00
1661.....	554.....	3.50
1662.....	555.....	4.25
1663.....	555.....	5.25
1664.....	554.....	4.00
1664½.....	554A.....	5.00
1665.....	554.....	4.50
1665½.....	554A.....	5.75
1666.....	555.....	5.25
1667.....	555.....	6.00
1670.....	552A.....	2.50
1676.....	552A.....	5.00
1680.....	552A.....	3.00
1682.....	552A.....	4.00
1686.....	552A.....	5.50

The same sheet illustrates new patterns of Padlocks which have recently been added to their line.

The Mallory-Wheeler Company, New Haven, Conn., announce the following revised list prices of their Scandinavian

Padlocks, which are subject to a trade discount of 50 per cent.:

No.	With 1 Key Per dozen.	With 2 Keys Per dozen.	Page in 1891 Illustr'd Book.
2010	\$2.75	\$3.25	290
2011	3.25	3.75	290
2012	4.00	4.50	290
2050	3.70	4.20	290
2051	4.45	4.95	290
2052	5.10	5.60	290

Zimmerman's Blind Fastener.—Zimmerman's Steel Bar Blind Fastener, manufactured by Tyson & Zimmerman, Frederick, Md., for whom W. H. Jacobus, 90 Chambers street, New York, is agent, is sold from the following list, which is subject to a discount of 50 per cent.:

<i>Japanned, per Dozen Sets.</i>					
9	10%	12	14	16	18 inch
\$4.50	\$5.00	\$5.50	\$6.50	\$7.00	\$7.50

<i>Galvanized, per Dozen Sets.</i>					
9	10%	12	14	16	18 inch
\$6.00	\$6.50	\$7.00	\$7.75	\$8.50	\$9.00

Stocks and Dies.—J. M. King & Co., Waterford, N. Y., Holroyd & Co., Waterford, N. Y., and Butterfield & Co., Derby Line, Vt., have recently made an advance in the price of Blacksmiths' Stocks and Dies, the discount now being 35 per cent. Blacksmiths' Plug and Taper Taps are quoted at 60 per cent. discount.

Glass.—The Glass market continues lifeless and without interest. Trade is quiet, as is to be expected at this season of the year, and while there is a disposition on the part of jobbers of American Glass to maintain prices, orders that can be obtained by making a concession in price are not refused. It is reported that manufacturers are counting on an opportunity to raise prices before many weeks are past, but as long as jobbers are merely turning their stocks into cash or accounts, with scarcely a living margin, there appears to be little prospect of their hopes being realized. On imported Glass reports indicate a stronger market, but poor demand. A writer who has had long experience in the sale of Glass states that nearly 1,000,000 boxes of French, German and English Glass are imported annually, for use in picture frames, coffins, railroad and street cars, omnibuses, carriages, &c., and claims that the defects of American Glass are caused in the finishing. Small lots of American Glass can doubtless be obtained at the prices quoted for large quantities. Quoted prices are unchanged, as follows: American Window Glass, 1000-box lots or more, 80, 10 and 5 per cent. discount; carloads, 80 and 10 per cent. discount; less than carloads, 80 and 5 per cent. discount; French Window Glass, 80 and 5 per cent. discount; American Plate is held at a discount of 50, 10 and 5 per cent., and imported Plate at a discount of 60 per cent.

German Chain.—As we go to press we are in receipt of advices in regard to a new list on German Coil and Halter Chain, which is printed in full on another page.

Export Notes.

TRADE WITH MEXICO is improving somewhat from a variety of causes. The failure of the crops in some sections, being followed by the suspension of import duties on corn for the months of July and August, has resulted in quantities of that cereal going forward via Vera Cruz and Tampico, and also all rail via Paso del Norte, the cut rate of 50 cents per hundred for carloads making large shipments possible. The elections, too, have pro-

gressed favorably, resulting in the re-election of President Diaz unopposed. According to the returns, the Senate and Chamber of Deputies will be composed of a superior element, introducing new and young blood. Many deferred orders, held back in the hope that exchange would decline, are being placed, merchants accepting the situation and looking for no appreciation in silver, consequently no reduction in exchange. The strikes in the iron trade have stimulated the demand for Barb Wire and similar goods, heavy Hardware, Rails, Nails, &c., obtaining the cut rate quoted above, and the better class in proportion.

Venezuelan trade remains about the same, the complications there making traffic undesirable for the present, while the imposition of a duty by the United States Government on Coffee and Hides has diverted these articles to other ports.

Our commercial relations with the West Coast countries of South America increase steadily, W. R. Grace & Co., in addition to their regular fleet of sailing vessels, being compelled to put on the steamer Eboe, direct for Talcahuano, Valparaiso, Molendo and Callao, calling also at Antofagasta and Arica, if sufficient cargo offers. Her engagements were nearly all made before going in berth, about three-quarters being for W. R. Grace & Co. She will be dispatched about August 1 and may be followed by the steamer Balcarres Brook (whose sailing the Eboe cancelled on account of non-arrival) as she is still under charter. Among the goods she will carry are Pumps, Cider Mills, Plows, Clocks, Oils, Powder, Canned Meats and Fish and miscellaneous Hardware. There are also satisfactory quantities of Wall Paper, usually supplied from France, Glassware, Stoves, Coffins, Envelopes, &c. There is, too, a considerable consignment of Spring Steel, Bar, Hoop and Sheet Iron, ordered for comparison with Sheffield goods as to quality and price.

The colonies in South Africa having weathered the collapse of their mining boom, which occurred about 18 months ago, are now emerging from their difficulties, the financial atmosphere having been cleared considerably thereby. Business has been re-established on a sounder and more satisfactory basis. Heretofore Natal has been the principal port of discharge, but owing to the recent completion of the railroads from Port Elizabeth and East London to the mining towns of Johannesburg and Barberton the bulk of shipments now seek the latter ports, intended for distribution in the interior. Gold mining, which has been steadily advancing some 3000 ounces a month, has now passed the 100,000 ounce per month mark, and business is described as brisk.

Norton & Son, 90 Wall street, report quantities of Agricultural Implements, including Harvesters, Binders, Headers and Binding Twine for Montevideo, Buenos Ayres and Rosario. Shipments of oil, rosin, &c., are light on account of over stock.

They are loading the steamer Cresswell of 2030 tons register for the three ports named, to be dispatched about July 20, and will also give through bill of lading to Colastine.

The export department of Flint & Co., export commission merchants, 140-142 Pearl street, New York, for some time past in charge of Charles B. Corwin, formerly of Stevens, Corwin & Co. and H. B. Newhall Company, has within the past 15 months given particular attention to the development of Spanish American trade, with especial reference to American manufactures of all sorts. Their endeavors have been directed in the line of special work for manufacturers, and as they have a number of resident agents and sample rooms, together with travelers to introduce goods, they are in a position to command trade. We are informed their sample rooms at present are located as follows, viz.: City of Mexico, Mexico; Guayaquil, Ecuador; Bogota, Columbia; Lima, Peru; Valparaiso, Chile; Buenos Ayres, Argentine Republic; Rio de Janeiro, Brazil; San Juan, Porto Rico; Havana, Cuba. They have also lately established at 105-107 Queen Victoria street, London, E. C., England, a depot of American goods, in charge of S. Levy Lawson, who has had years of experience in the export trade. From this depot the European demand will be supplied, and we understand they have a large stock of American goods in store, it being their purpose to build up a business in these countries by having the goods upon the spot, that the wants of purchasers may be promptly met.

Thomas A. Eddy of Coombs, Crosby & Eddy Company, who left New York, May 2, for Montevideo, Buenos Ayres, Rosario, &c., arrived June 28, and his company have received several cables from him.

F. Page Wood, representing Arkell & Douglas, 95 Broad street, exporters to South Africa and Australasian ports, has just started for a thorough trip in the South African colonies via London, on business for that concern.

Henry Jacoby of Jacoby & Wester, 83 Murray street, importers of fine Cutlery, Surgical Scissors, Manicure Fittings and Hardware, sailed for Hamburg on the Fuerst Bismarck, June 30, expecting to return about the middle of August. This firm, recently established, handle in this country the goods made by Wester & Butz, Solingen, Germany.

Pacific Coast Freights.

AS MATTERS EXIST TO-DAY, merchants on the Pacific Coast are not suffering for lack of transportation facilities (other than overland) or low rates of freight. A year ago a fair average rate around Cape Horn was 75 cents per 100 pounds. Now some of the coarser goods are taken at 30 to 35 cents per 100. Up to about two years ago the old lines of Sutton & Co. and Dearborn & Co. con-

trolled the clipper trade. At that time Balfour, Williamson & Co., Liverpool and New York, put on a line of vessels which now ply between New York and San Francisco, Portland, Ore., and Seattle and Tacoma, on Puget Sound. In addition to general freight they carry goods on their own account, being merchants as well as vessel agents. This firm also has connections at Valparaiso, Concepcion and Traiguén, Chili. Following them, Barber & Co., 31 and 33 Broadway, N. Y., established the Atlantic & Pacific S. S. Line last fall, taking freight via the Straits of Magellan for Los Angeles via Redondo and San Francisco, having sent out since then the following steamers, viz.: Keweenaw, Mackinaw, Mineola (twice), Progresso, with the Conemaugh, 2328 tons register, now in berth loading to be dispatched the middle or latter part of July. These steamers have made the distance in 65 to 70 days, steaming to Valparaiso before recaling, taking such goods as Nails at 65 cents per keg, kindred goods at similar rates, up to carpets and dry goods at \$1.50 per hundredweight. For fairly quick time and better protection from salt water than sailing vessels can offer this is regarded as a great gain, there being no breaking bulk or rehandling, the Pacific Mail Company consuming about 45 days, rough usage at the Isthmus, and rates 80 per cent. of the transcontinental tariff. Their desire is to dispatch at least one steamer a month. Following the steamship line, W. R. Grace & Co., Hanover Square, New York, have put on a line between New York and San Francisco, their agents there being J. W. Grace & Co. This is independent of their regular line to the numerous West coast ports of South America.

The organization of the lines named, in addition to those in operation for years, will insure low rates and frequent dispatch. Some time since goods were sent by steamer from New York to Antwerp, thence by sail to San Francisco, some rates being as low as 65 cents per hundred, but this enterprise was cancelled by the United States Government as an infraction of the coasting laws. There has been published a statement that the line of J. W. Grace & Co., "has started a line of clipper ships to run between this city (San Francisco) and New York, with the express purpose of co-operating with the railroad and the Pacific Mail Company." This is emphatically denied by W. R. Grace & Co., they saying its publication was apparently for the purpose of injuring their line. Under date of June 23, 1892, "The Traffic Association of California," composed of merchants, headquarters, 14 Sansome street, San Francisco, addressed a circular letter to the members of the association, calling attention to the three new lines referred to in the following terms:

"It is, therefore, incumbent upon the members that these new enterprises shall receive our earnest support and co-operation to the exclusion of the old established lines, which have not given that degree of competition which our necessities have in the past demanded. It has already been

given out by the old lines that these new competitors in the field will be short lived, and that shippers who desert the old lines at this time will be remembered when these competitors are out of the way. For your information we desire to state that the new lines have been thoroughly investigated by this committee, and we are satisfied as to the reliability and stability of the enterprises, and that with our support they are here to stay, and are deserving of our patronage, regardless of what may be done by the older lines as a temporary expedient."

American Hardware in Belgium.

[From a Special Belgian Correspondent.]

BELGIUM is a small country, but presents a large field for American enterprise; this country may well be called the "Gate of the Continent." American manufacturers having novelties suitable for the Continent would do well, therefore, to test their sale first in the Belgian market, for if they succeed here they will soon find their way into the neighboring countries, owing to the constant intercourse there is between Brussels, Liege and Antwerp with Germany, Switzerland, Holland, France and other countries.

There are several reasons why firms wishing to do a trade on the Continent should begin here.

The small customs duty on Manufactured Hardware is only 10 per cent. As most Belgians generally "do their duty," and this custom is well known, this is in most cases reduced, and many shipping agents offer to clear goods through at 6 or 7 per cent. duty. I will not enter into the moral side of this or present the many excuses given for this practice. I content myself with stating the facts. On Machinery, including Typewriters, &c., the duties are still less, being only 4 francs for 100 kilos (2 hundredweight).

Another reason for doing business here is that there is a very decided and pronounced demand for American goods in this country, and I should find a difficulty in stating a market in Europe where American goods meet with such a decided approval as here.

The wholesale jobbers are important and well to do firms, and a small risk is run if proper precautions are taken. Of course no goods should be sent to firms whose standing is not well known, and special caution should be taken with firms who make big promises on postal cards. I have investigated several of these inquiries for my friends in England and the States, and, as a rule, find they originate from a lodger in an *estaminet* (small hotel or *café* of third or fourth order), and on inquiry for the gentleman in question the invariable reply is "*Monsieur n'est pas chez lui.*"

As in most countries, the good houses are not the easiest to angle with, but as a rule the Belgian buyer is a good man of business, and if an advantage can be shown he is not slow to accept it.

The general mode of payment is draft through bankers at 90 days net, or 2 per cent. at 30 days, which draft is payable the last day of the month, the month of sending goods not being counted. Thus goods sold at 90 days, if forwarded and invoiced June 15, would fall due September 30. Drafts are not sent by post for acceptance, but paid through the bank which is in correspondence with banks here, as the bankers here undertake collection. This being the general Continental custom, I have no doubt the generality of export firms are conversant with it.

Most of the wholesale firms here are well up in English, and can correspond in this language. Still, it is well not to count too much on this, and where possible price-lists should be made in French and prices quoted in francs, and measures in meters; where possible goods should be quoted delivered free, C. and D. paid; any respectable firm of shipping agents will be willing to make arrangements at a certain percentage on net value for delivery in any town in Belgium.

Much has been done in American Hardware in Belgium, and an American visiting Belgium cannot fail to be struck with the quantity of American show cards of leading lines to be seen in the ironmongers' windows. The same will apply to many other trades, but we will confine ourselves as much as possible to Hardware.

A few lines are having a big sale in Belgium and are making great progress here, as also in other parts of the Continent, as follows:

Hay Forks.—These are nearly all of American make here, some German and local makes and a very few English. American goods take the lead in this line.

Lawn Mowers.—I have investigated many stores here, and, notwithstanding the fact that England is close at hand, I have not as yet seen a single English Lawn Mower in Belgium; doubtless there are some; still here again America takes the lead, and any firm introducing a Lawn Mower not of American make would meet with small success.

Mincing and Meat-Chopping Machines.—The same remarks apply to this article, only in a greater degree. The writer has traveled considerably in England, France, Belgium, Holland, Switzerland, and has taken a pretty good look round, but in no country has he seen so many Mincers as in Belgium. The Enterprise is well to the front. In Brussels, Antwerp and other large towns it would be very difficult to find a butcher or pork butcher who has not an Enterprise on his counter and the Enterprise people may well be proud of their position in Belgium.

Scythes and Oil Stones.—Indian Pond have a big sale here and the Pike Mfg. Company's goods in great demand. Washita Oil Stones are much demanded by good workmen, who know a good article, and the Pike Mfg. Company have not much reason to grumble about their Belgian orders and their position is firmly planted here.

Freezers and other Woodware Goods are in constant demand. In Ice Cream Freez-

Trade Items.

THE JOHN M. WADDEL MFG. COMPANY, Greenfield, Ohio, use an ingenious device to insure attention being given to their advertising matter. On the left-hand corner of an envelope, with the index finger of a hand pointing to them, are these words: "A lost letter. Postmaster will please deliver to address given below." The supposed lost letter is in pamphlet form, printed in typewriter type, calling attention to the Sun Cash Register manufactured by the above firm.

THE BUSINESS of McCabe, Johnson & Co., dealers in Hardware at Spokane, Wash., has been incorporated.

THE CANTON SAW COMPANY, Canton, Ohio, advise us that they have sufficiently recovered from the effects of their fire to again fill orders for Glass Boards, and they will accordingly be glad to hear from the trade on these goods.

THE MANY FRIENDS of G. T. Moore, 112 Chambers street, New York, will be pleased to learn that he has, it is thought, safely passed the crisis of his illness, and it is hoped he is now on the way to recovery. Wednesday, July 6, he complained of being ill, and when physicians were called in his trouble was pronounced peritonitis.

CHAS. S. HEALY, 116 Chambers street, New York, importer and dealer in Hardware and Cutlery, has recently added considerably to the line dealt in by him, and has now in press a new catalogue, containing over 300 illustrations, which will be issued, it is expected, next week.

JOHN H. GRAHAM & Co., 113 Chambers street, New York, have been appointed general selling agents for the sale of the Handles of the Nashville Spoke & Handle Company, Nashville, Tenn. A good stock of the Handles will be carried, which will be sold exclusively at factory prices.

EMPIRE PORTABLE FORGE COMPANY, Lansingburg, N. Y., announce July 11 that S. C. Gault will hereafter be associated with them as their representative on the road, offering the company's line of goods in the cities he has been visiting for many years. These include the Empire, Western and Universal Portable Forges, Empire Sash Pulleys, Round-End Machine Pulleys, Geo. Washington Hatchets, Daubers, Vitrified Steels, Yankee Ice Picks, Curley's Corkscrews, Razor Strops, &c.

UNDERHILL, CLINCH & Co., 94 Chambers street, New York, issue a circular in which they refer to the fact that while the control of the product and business of the Branford Lock Works was transferred to the Yale & Towne Mfg. Company as lessees, they have a contract by which they continue as agents for New York and vicinity for the sale of the goods of the Branford Lock Works, and state that they will continue to carry in stock a full line of such goods, and that their prices will be the same as those made by the Yale & Towne Mfg. Company. They express the hope that the new relations will not affect their customers' future purchases of these goods, and that they may be favored with their orders.

THE H. M. MYERS COMPANY, Beaver Falls, Pa., have completed arrangements to manufacture a new Shovel Scraper, which is attached to the Shovel for the purpose of cleaning when in use in clay or damp soil. The company report a good business and advise us that they have been making 5000 dozen Shovels per month during the year. They refer to their product this season as likely to reach the

maximum quantity of 55,000 to 60,000 dozen. The company issue a circular in which a brief explanation is given of the method of making their One-Piece Solid Steel Shovels, of which they are the exclusive manufacturers in the United States. Another circular gives the stamp which is to be found on their goods, while it also illustrates their Shovels and Spades. The company advise us that the Paper Weight and Pen Rests which were distributed to the trade a short time since have met with such general favor that they are just about to distribute a second lot of 1000.

CARY MFG. COMPANY, manufacturers of Cary's Patent Universal Metal Strap, formerly of 41 and 43 Centre street, New York, have removed to 5, 7 and 9 Elm street.

American Wringer Co.

THIS COMPANY, who recently leased the entire building 99 Chambers street, New York, have about completed the numerous alterations and improvements commenced some time since. With the exception of the second and fourth lofts, it is all used by them in the transaction of their business. In the cellar, sub cellar and third loft goods are stored sufficient to supply promptly the local demand. The installment department is given space in the first loft, the balance being used as a repair shop. The most striking changes are on the first or ground floor. The space in front is used as a sample and sales room. Then follows the inclosure assigned to the stenographers and typewriters and copying of letters. The remaining portion is divided into four sections with glass partitions, with windows above to swing horizontally for purposes of ventilation. In the first compartment the correspondence is attended to. The second is occupied by the cashier and bookkeepers. The third is fitted up as a directors' room, and is also used by the manager. In the fourth the shipping is done. The joiner work is in oak, with desks and furniture to correspond. The floor is covered with a serviceable linoleum, adding much to the attractiveness of the place. The ceiling is stamped steel, decorated and tinted, the walls being painted, and the lighting is done by electricity. An aisle running the entire length of the building gives easy access to any office without disturbing the others, and plenty of windows insure proper light and ventilation. The manager, George Reuter, Jr., sailed on the Normannia June 16 for a two months' trip abroad, his mission being a mixture of business and pleasure.

Price-Lists, Circulars, &c.

OHIO LANTERN COMPANY, Tiffin, Ohio, manufacturers of Lanterns, Lamps and Specialties, with branch offices at 34 Wabash avenue, Chicago, Ill., and 610 North Second street, St. Louis, Mo.: Catalogue showing Tubular Lanterns, Tubular Dash Lanterns, Tubular Street and Square Lamps, Brilliant Conductors, Railroad and Farm Lanterns, Reflector Side and Tin Hand Lamps, Burners, Molasses Jug Tops, Fruit Jar Caps and Wires, Jelly Glass Caps, Salt, Pepper, Sugar Shaker and other Screw Tops from Tin, &c. The book is attractively printed in two colors and will prove of interest to the trade.

NEWTON CORBETT, 214 Lake street, Chicago, Ill.: Budget of circulars relating to Steel Flat Nose Pliers, Standard Union Padlocks, Wheelbarrows, Wire Goods, &c.

NATIONAL WRINGER AND MFG. COMPANY, Canton, Ohio, with branch office in San Francisco, Cal.: Manufacturers of the Erie, King, 77, Daisy, Columbia, Prime and Pittsburgh Wringers and Champion Ice

Tongs. Attention is called to delivery at all points on and east of the Mississippi River, and a deduction of 2 per cent. for cash.

THE AMERICAN WRINGER COMPANY, 99 Chambers street, New York: Wringers. Illustrations are given of the Daisy, Superior and "The A. W. Co." Iron-Frame Wringers; the Empire, Volunteer, Relief, Imperial and Novelty Wood-Frame Wringers; also cut and description of the Gem Clothes Dryer.

CLYDE CUTLERY COMPANY, Clyde, Ohio: Cutlery. Illustrated catalogue showing Hedge Shears, Butchers' Steak Knives, Butcher Steels, Carving, Sticking, Skin-ning, Fish and Paring Knives.

WELLS WHIP COMPANY, Wellsville, Pa.: Leather and Cotton Fly Nets, Halters and Strap Work. Price-lists are given of a large variety of Nets in different styles and sizes; also of Halters, Snap Ties, Bridles, Rope Halters, Hame Strings, Hame Straps, &c.

THE IDEAL MFG. COMPANY, New Haven, Conn., have just issued their No. 3 Hand Book of useful information for Rifle shooters, giving knowledge gleaned from experience and directing how to prepare one's own ammunition, in a detailed and comprehensive form. Much tabulated information is given in a clear and concise manner, while the book is desirable as a work of reference regarding Reloading Tools, Bullets, &c., and the use of the same. Four pages are assigned to grooved and round Bullets under the headings Calibre, Weight of Powder, Weight of Bullets, Names of Rifle Makers, Composition of Materials and Diameter of Bullets in Thousandths. Attention is called to the Re and De-Capper, Bullet Seater, Cylindrical Adjustable Mold, besides a number of tables reducing drams to grains, twist of rifling in rifle barrels as made by the different Arms companies, together with some special lists of Loading Flasks, Molds for Patched Bullets, Bullet Serving Tools and Bullets.

SIDNEY SHEPARD & Co., Buffalo, N. Y. Coal Vases, Oil Tanks, Steam Egg Poacher, Water Coolers, Family Oil Cans, &c. These goods are illustrated in colors on cards, with descriptions and price-lists.

THE WILKINSON COMPANY, Chicago, Ill.: Anglers' Souvenir and Sportsmen's Guide for 1892. This is a book of some 75 pages, including advertisements of anglers' goods, descriptions and use of fishing accessories, and interesting talks on migratory camping, fishing with the fly, how to repair the rod, &c. The book is full of interest to the angler, and will prove of value in selecting fishing outfits.

FREEMAN WIRE & IRON COMPANY, East St. Louis, Mo.: Imitation Leather Card Case advertising Freeman's Diamond Barb Wire. The manufacturers claim that it only requires 310 pounds of Galvanized Wire to fence a mile, and but 330 pounds of the Japanned Wire for the same distance.

PARAGON MFG. COMPANY, New Haven, Conn. Salesroom. 112 Chambers street, New York. G. T. Moore, agent: New catalogue. Among the articles contained in it are Pipe Vises, Nail and Tack Hammers, Wrenches, Pliers, Speed Indicators, Spokeshaves, Nut Crackers, Can Openers, Ice Awl and Chisel, Mail Boxes, Pocket Levels, Tack Claws, Hat and Coat Hooks and Family Soldering Kits.

THE PLUME & ATWOOD MFG. COMPANY, 18 Murray street, New York: Catalogue and price-list of Sleigh Bells manufactured by the American Ring Company, for whom they are agents. Among the styles shown are Arctic, Polar, Antarctic and Alaska Sleigh Bells, Swiss Chimes and Shaft and Pole Bells, Swiss and Russian Saddle Sleigh Bells, all fully illustrated and described. Special attention is directed to the fact that black straps will be sent in all cases unless otherwise specified in the order.

It Is Reported—

That C. J. Boyd of Clio, Mich., has bought the Hardware stock of Morley Bros., Mt. Morris, and will continue the business at the old stand.

That the Pierce Hardware Company have been incorporated at San Francisco, Cal. The capital stock is \$100,000, subscribed as follows: W. V. Witcher, \$32,800; N. H. Coil, \$32,600; S. I. Blake, \$32,600; F. J. Goodwin, \$1000, and C. L. Hewes, \$1000.

That E. B. Lesh, Hardware and Stoves, Americus, Kan., is building an addition to his store room of 30 feet.

That F. O. Walker has opened a Hardware store at 612 Minnesota avenue, Kansas City, Mo.

That John Mabius, Bloomington, Ill., has finished his Hardware store and blacksmith shop, and is putting in quite an extensive stock of goods.

That the Hardware store of Charles Ege, 111 Gratiot avenue, Detroit, Mich., was burglarized on the 26th ult. Twelve Revolvers were stolen.

That the Hardware store of Hannan & Obitts, Elyria, Ohio, was robbed on the 22d ult., a large variety of Keys being secured.

That the annual meeting of the Macon Hardware Company, Macon, Ga., was held on the 23d ult. The following officers were elected for the ensuing year: H. C. Tindall, president; John C. Van Syckel, vice-president, and L. E. Culver, secretary and treasurer. These parties also comprise the Board of Directors.

That Nathan Suplee, Malvern, Pa., is building an addition to his Hardware store.

That G. W. Peck & Co., Pultney, N. Y., dealers in Hardware, Stoves, Implements, &c., will soon erect a new warehouse, 25 x 50 feet.

That Dixon & Garmen succeed Dixon & Briggs in the Hardware business at New Hampton, Iowa.

That Gardner, Ure & Young succeed the old firm of Gardner & Ure at New Hampton, Iowa.

That Tooley & Stanton are a new Hardware concern at New Hampton, Iowa, having recently bought out E. Sunderlin.

That F. C. Walker, the Hardware merchant, of Kansas City, Mo., has opened a branch store at 612 Minnesota avenue.

That G. G. Kinman has moved his Hardware stock to the rooms formerly occupied by Mills & Co., Robinson, Kan.

That John MacLay has sold his Hardware business in Savannah, and will open a Hardware store in the Bradley Block, Dubuque, Iowa.

That Nathaniel S. Kirk and his son, George W. Kirk, and Alfred Hawks have purchased M. B. W. Wheeler's Hardware business at Westport, Conn., and will open with a new stock in Mr. Wheeler's store just as soon as repairs in the building are completed.

That in a fire at Olin, Iowa, on the 29th ult., the Hardware store of L. H. Peck was damaged. Loss, \$800. Insurance, \$1600.

That the Hardware store of Cummings & Shedd, Fitchburg, Mass., was entered by burglars on the 3d inst., and nine Revolvers and a considerable quantity of Cartridges stolen.

That Budd & Ford, dealers in Agricultural Implements, Edna, Minn., have been succeeded by a new firm under the style of Budd, Johnson & Ford.

That John M. Morrow has purchased the Hardware and Implement business of George Davis, Washington, Pa., and will continue it at the old quarters. Mr. Morrow has been identified with the business

for many years, having occupied a responsible and confidential position in the establishment.

That the Garfield Hardware & Mercantile Company, successors to Smith & Crumbacher of Garfield, Wash., have been incorporated.

That Saxe & Williams, Hardware dealers at Whitewater, Wis., have dissolved. Williams & Lemmel will hereafter conduct the business.

That Salmer & Iverson's Hardware store at Vermillion, Iowa, was robbed on the 29th ult. A considerable quantity of Cutlery and Revolvers was secured.

That J. S. Moul of Pine Ridge, Pa., has purchased the Hardware store of Joel Stoner & Son of Wrightsville, Pa.

That Hasbrouck & Hayden are about to open a large Hardware and Stove store at New Paltz, N. Y. They will commence business as soon as a new building which is being erected for them is completed. It is of frame, 20 x 50 feet, two stories and basement.

That the Hardware establishment of Chatfield & Co., Owego, N. Y., was entered by burglars on the 2d inst. and \$100 worth of goods taken.

That in a fire at Troy, N. Y., on the 7th inst., the wholesale Hardware and Implement establishment of H. D. Hull was destroyed.

That Strouks & Kapples, Hardware dealers at Baldwin, Wis., have been succeeded by Strouks & Le Page.

That on the 30th ult. the Hardware store of M. J. Wickersham & Co., Axtell, Neb., was broken into and robbed of \$300 worth of Guns, Revolvers, Cutlery and Silver Ware.

That L. Nutz's Hardware store at Springfield, Mo., was burglarized on the 1st inst.; \$60 worth of goods were stolen.

That Simcox, Largon & Co., Hardware dealers at Marinette, Wis., have dissolved. Simcox Bros. & Co. succeeding.

That Cameron & Boring, dealers in Hardware, Elizabethtown, Tenn., are repairing their Hardware store and making needed alterations.

That Prudhon & Howard are erecting a handsome store building for their Hardware business at Nashua, Iowa. It will be 100 feet deep, costing \$6000, and will be fitted up with all the latest appliances for economizing space and time.

That Tomlinson & Williams succeed E. P. Shepherd in the Hardware business at Osage, Iowa.

That Dalager & Wobach is a new concern in the Hardware trade at Austin, Minn., having recently bought out Roberts & Co.

That Garner Bros. bought out, July 1, Gale Bros. at Mason City, Iowa, and will continue business at the old stand.

That the Hardware firm of F. C. & C. A. Conrads of Trenton, Mo., has been dissolved. Clement A. Conrads will continue the business, F. C. Conrads having retired. In 1858 the business was established at Lindley, from which point it was removed to Trenton in 1865. The retirement of F. C. Conrads is due to ill health, and he expects to take at least a year's rest, at the end of which time he may enter active business life again.

That the Hardware store of William Keegan, Pottsville, Pa., was slightly damaged by fire on the 30th ult.

That a couple of weeks since the Hardware store of Fall & Yates, Morris, N. Y., was entered by burglars and about \$60 in cash was abstracted from the safe.

That George A. Swalm, the Hardware merchant, of Middletown, N. Y., has admitted his son, George A. Swalm, Jr., to partnership, and the business will hereafter be conducted under the firm name of

George A. Swalm & Son. The business was established January 1, 1856, by Dill & Swalm, and twenty years later, in 1876, Mr. Swalm purchased Mr. Dill's interest and has conducted it alone ever since. His son has been in his father's employment for several years and is thoroughly familiar with the business.

Exports.

PER SHIP ROMANOFF, JUNE 23, 1892, FOR SYDNEY, N. S. W.

By Henry W. Peabody & Co.—3 cases Builders' Hardware, 1 case Whip Sockets, 3 cases Iron Bolts, 8 cases Bolts.

By R. H. Dana Company.—25 cases Handles. By C. S. Whitney.—1 case Axe Handles, 1 case Sad Irons, 1 case Hatchets, 1 case Lamps.

By Henley Machine Tool Works.—251 cases Lawn Mowers.

By S. Hoffnung & Co.—4 cases Handled Rakes, 1 case Shovels, 2 cases Hammers.

By Wilham J. Cumming's Sons.—4 cases Hatchets, 1 case Locks, 1 case Glass Cutters, 7 cases Saws, 1 case Locks, 1 case Pumps, 1 case File Handles, 12 cases Lanterns, 1 case Hoes, 1 case Adzes, 4 cases Handles, 1 case Carriage Clamps, 28 cases Agate and Tin Ware, 5 Rifles, 250,000 Primers, 16 cases Cartridges, 1 case Locks, 3 cases Wire Cloth, 5 cases Builders' Hardware, 12 cases Finishing Nails.

By S. Hoffnung & Co.—58 Boxes Axes, 1 case Pistols, 2 cases Hammers, 4 cases Saws, 1 case Clippers, 4 cases Nails, 8 cases Wireware, 2 cases Traps, 5 cases Sad Irons, 2 cases Mouse Traps, 15 packages Lampware, 8 cases Bolts, 2 cases Wrenches, 3 cases Stone, 8 cases Lampware, 1 case Lamps, 1 case Cutlery, 2 cases Iron Toys, 1 case Air Guns, 2 cases Implements, 14 cases Wheelbarrows.

By Strong & Troubridge.—1 case Locks, 36 cases Handles, 30 cases Axes, 40 cases Fruit Jars, 17 packages Lampware, 2 cases Chucks, 1 case Forks, 4 crates Handles, 13 cases Axes and Hatchets, 1 case Trimmers, 1 case Augers, 1 case Egg Beaters, 1 case Tacks, 1 case Drills, 8 boxes Tacks, 4 cases Nails, 2 cases Drills, 15 cases Fruit Jars.

By Arkell & Douglas.—100 reels Barb Wire, 2 cases Wringers, 2 barrels Blocks, 19 cases Nails, 3 racks Churns, 8 cases Bench Screws, 10 crates Refrigerators, 8 cases Guns, 2 cases Axes, 7 packages Shellers, 5 cases Tacks, 3 cases Saws, 1 case Staples, 1 case Plated Ware, 17 cases Rivets, 1 case Snaths, 10 kegs Nails, 1 case Ladders, 16 cases Handles, 8 cases Shovels, 19 packages Hardware, 1 case Hoes, 2 cases Rakes, 8 cases Forks, 1 case Shovels, 24 cases Hatchets, 90 cases Axes, 22 cases Bolts, 53 cases Cartridges.

By Sargent & Co.—5 cases Hardware. By Edward Miller & Co.—9 packages Lamp Goods.

By Meriden Britannia Company.—5 boxes Silver-Plated Ware.

By Manhattan Brass Company.—20 barrels Lamp Goods.

By Union Nut Company.—13 cases Iron Bolts.

By Winchester Repeating Arms Company.—1 case Guns.

By Atlas Tack Company.—62 boxes Nails, 3 boxes Tacks.

By Winchester Repeating Arms Company.—5 cases Guns, 3 cases Tools, 11 cases Cartridges, 1 case Primers.

By Woodhouse & Stortz.—18 cases Hardware, 11 cases Tools, 3 cases Lamp Goods, 2 cases Wringers, 2 cases Bird Cages.

By Australasian-American Shipping Company.—4 cases Carriage Springs, 2 cases Axes, 20 cases Axes, 3 cases Sporting Goods.

SUPPLEMENTARY SHIPMENTS PER BARK SARANAC, JUNE 24, 1892, FOR FREEMANTLE, AUSTRALIA.

By W. A. Chipman.—4 cases Hardware.

By W. H. Crossman & Bro.—1 case Carriage Hardware, 1 case Lanterns, 5 cases Hardware.

By the F. B. Wheeler Company.—5 packages Pumps and Parts, 8 packages Windmills and Fittings.

By R. W. Cameron & Co.—4 boxes Axes, 10 cases Hardware, 2 packages Scythes, 1 crate Handles, 3 cases Hardware, 2 cases Guns, 18 cases Cartridges, 1 case Hardware, 1 case Braces, 2 cases Wrenches, 1 case Hardware, 1 case Pumps, 25 boxes Axes, 5 cases Fruit Jars, 2 cases Handles, 4 cases Mattocks, 1 case Oil Stones, 100 bundles Barb Wire, 50 packages Harvesting Machinery.

PER SHIP ALEXANDER YATES, JUNE 28, 1892, FOR SYDNEY, N. S. W.

By Chas. R. Seabury.—2 cases Fire Arms.

By E. W. Harrison.—7 cases Pick Handles.

By R. W. Forbes & Son.—18 cases Cork Pullers, 8 cases Wringers, 5 boxes Windmills.

By W. & B. Douglas.—7 boxes Pumps.

By W. K. Freeman.—4 packages Plated Ware.
By Edward Miller & Co.—7 packages Lamp Goods.

By Simpson, Hall, Miller & Co.—15 packages Silver-Plated Ware.

By E. W. Harrison.—1 package Hardware.

By L. W. Crossmond & Co.—41 cases Agricultural Implements.

By W. J. Kingsland.—16 cases Hardware.

By Hussey, Binns & Co.—7 cases Shovels.

By A. S. Lascelles & Co.—1 case Locks, 1 case Pullers, 1 case Revolvers, 1 case Money Tills, 4 cases Hooks, 1 case Forks, 1 case Cages, 8 cases Choppers, 5 cases Springs, 3 barrels Cow Bells, 1 case Nails, 3 packages Bells, 3 cases Wrenches, 2 cases Saws, 1 case Braces, 6 cases Handles, 36 cases Axes, 6 cases Hatchets, 25 cases Axes, 4 cases Picks, 7 cases Hammers, 1 case Snaths, 6 cases Tacks.

By Henry W. Peabody & Co.—3 cases Axes, 1 case Rivets, 1 case Sandpaper, 4 cases Horse Nails, 3 packages Hardware, 10 crates Refrigerators, 1 package Razors, 1 box Curriers' Tools, 4 cases Nails, 5 cases Fire Arms, 1 case Carpet Sweepers, 3 cases Sandpaper, 7 cases Wire Goods, 10 cases Cartridges, 10 cases Nails.

By R. H. Dana Company.—3 cases Tinware, 3 cases Wire Goods, 3 barrels Plated Ware.

By William K. Freeman.—9 packages and 9 boxes Shelf Hardware, 1 case Saws, 12 cases Axes, 1 case Drills, 2 cases Shelf Hardware, 5 packages Pumps.

By The E. B. Wheeler Company.—2 cases Hardware, 25 cases Axes, 1 case Hardware, 4 cases Hardware, 12 cases Handles, 2 cases Whipstocks, 13 cases Refrigerators.

By Hsley, Doubleday & Co.—1 case Wire Goods, 3 cases Hardware.

PER BARK ANNIE STAFFORD, JUNE 29, 1892,
FOR LYTTELTON, NEW ZEALAND.

By H. W. Peabody & Co.—9 cases Hardware, 1 case Freezers, 13 cases Nails, 2 cases Pumps, 44 packages Hardware, 4 crates Handles, 1 case Shovels, 1 case Nails, 2 bundles Sash Cord, 2 cases Hay Rakes, 3 packages Pumps, 2 cases Mouse Traps, 17 cases Handles, 14 cases Wringers, 21 packages Hardware, 12 cases Fly Traps, 5 cases Farming Implements, 1 package Bolts, 4 crates Churns, 1 case Pencils, 14 cases Lawn Mowers, 2 crates Handles, 8 cases Horse Nails, 2 cases Wire, 4 crates Churns, 1576 packages Agricultural Machinery.

FOR DUNEDIN.

By Henry W. Peabody & Co.—20 reels Barb Wire, 13 packages Lamp Goods, 2 cases Air Rifles, 4 cases Farming Implements, 2 cases Scales, 16 cases Nails, 4 cases Handles, 14 packages Hardware, 20 packages Lawn Mowers, 7 cases Axes, 7 cases Farming Implements, 1 case Oil Cans, 1 case Pumps, 3 cases Shovels, 2 cases Bolts, 8 packages Stoves, 6 packages Hardware, 42 packages Lampware, 6 cases Cartridges, 5 cases Fire Arms, 13 packages Stoves, 1 case Nails, 17 packages Hardware, 11 cases Horse Nails, 1 case Farming Implements, 2 packages Lampware, 1 crate Handles, 9 packages Lawn Mowers, 2 cases Handles, 13 packages Hardware, 2 cases Axes, 3 cases Shovels, 1 case Lampware, 1 case Oilers, 13 packages Hardware, 3 cases Farming Implements, 16 cases Horse Nails, 1 case Seed Sowers, 2 cases Plated Ware, 3 cases Wringers, 5 cases Wringers, 1 case Egg Beaters, 33 packages Hardware, 2 cases Handles, 27 packages Lawn Mowers, 3 cases Axes, 1 package Air Rifles, 1 box Parers, 3 barrels Rubber Packing, 2 cases Axes, 19 packages Hardware, 12 packages Stoves, 6 crates Handles, 6 cases Fly Traps, 27 cases Cartridges, 5 cases Fire Arms, 7 cases Farming Implements, 9 packages Hardware, 8 cases Horse Nails, 1 case Rat Traps, 14 packages Hardware, 3 packages Lampware, 1 case Farming Implements, 1 case Picture Cord, 15 packages Hardware, 1 case Pumps, 5 packages Lawn Mowers, 1 case Shovels, 2 crates Handles, 5 cases Horse Nails, 1 case Farming Implements, 9 packages Hardware, 2 cases Mouse Traps, 25 cases Edge Tools, 5 cases Hardware, 18 cases Nails, 2 cases Shovels, 5 cases Handles, 4 cases Wringers, 16 cases Hardware, 3 cases Farming Implements, 1 case Shovels, 7 cases Horse Nails, 1 crate and 5 cases Handles, 14 packages Lawn Mowers, 6 packages Hardware, 3 cases Lampware, 2 cases Farming Implements, 9 cases Horse Nails, 2 packages Handles, 3 cases Bolts, 2 cases Mouse Traps, 2 cases Wringers, 4 cases Horse Nails, 14 packages Hardware, 4 cases Shovels, 4 cases Handles, 1 case Wringers, 1 case Sandpaper, 12 packages Hardware, 2 cases Farming Implements, 4 cases Horse Nails, 2 cases and 12 packages Hardware, 825 packages Agricultural Machinery, 7 packages Pumps, 1 case Hames, 3 cases Crayons, 1 case Builders' Hardware, 4 cases Air Rifles, 1 package Anti-Rattlers, 2 packages Edge Tools, 2 cases Builders' Hardware, 5 cases Handles, 5 cases Wringers, 1 package Anti-Rattlers, 414 packages Agri-

cultural Machinery, 33 packages Builders' Hardware, 15 packages Stoves, 7 crates Churns, 3 packages Lamp Goods, 55 packages Agricultural Machinery, 14 cases Horse Nails, 2 cases Shovels, 4 cases Shells, 12 cases Farming Implements, 1 case Stoves, 4 cases Wringers, 1 case Pumps, 17 packages Builders' Hardware, 4 packages Stoves.

By W. K. Freeman.—23 cases Horse Nails, 1 box Shelf Hardware, 1 case Axes.
By E. T. Hopkins.—4 cases Lawn Mowers.

Paints and Colors.

It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.

While showing more or less recovery from the quietude incidental to the holiday season and the turn of the year, business in nearly all lines of Paints and Colors has been almost wholly of a perfunctory character during the past week. As this fact might suggest, the conditions bearing upon the markets are not such as would encourage purchases beyond limits warranted by clearly defined wants. Certain it is that no particular incentive for anticipating future requirements has come to the surface, and evidence is wanting of consumption running beyond usual bounds for this season of the year. Few and only unimportant changes in prices have taken place, however, and remarkably good tone prevails nearly all along the line in the face of rather spiritless condition of trade.

White Lead.—On the market for corrodors' product there is nothing positively new to report, and operations in mixed Leads contrast very little with the general run previously this month. In short, the respective pigments are moving out in about the usual manner and to a fair extent, while producers' prices remain stationary all along the line. The departure from list prices that has been the rule rather than the exception in jobbing circles for some time past continues, but concessions are no greater at present than they were during the more active period of consumption, and the market is devoid of influences calculated to encourage deeper "cuts." Corrodors manifest no deeper concern over the outside competition, at all events, and change in cost of raw material is too narrow to figure with any prominence as a factor.

Red Lead, Litharge, &c.—In neither of the articles specified or in Orange Mineral has there been anything more than a routine business of fair proportions for the season. Still, manufacturers state that the movement into the channels of consumption keeps well in line with the early July average, and the former range of prices is maintained throughout.

Zincs.—For the ordinary grades of domestic Oxide there is merely a fair summer season demand, and the business passing is at the former line of prices. Those manufacturers who have this year introduced high-grade Zinc in competition with foreign brands assert that tests have afforded satisfactory evidence of their merit, and an extension of trade in that class of product later on is confidently calculated upon. Some accumulation of supplies in manufacturers' hands is taking place, as usual in the summer months, but not enough to have any unfavorable bearing upon values. In foreign brands there is merely the routine trade, with prices steady at the lately issued list.

Colors, &c.—The staple lines of Dry and Oil Colors have been selling quite as well as they usually do in the month of July. The same is to be remarked of the cheaper varieties and of Mixed Paints. All told, the movement is moderate, however, and aside from some slight irregularity on goods that are outside association control, there is really no fluctuation in prices.

Manufacturers are abreast of their orders for Paris Green, but make no concessions from former prices.

Miscellaneous.—The market for Block Chalk has been very quiet and without change. Local brands of Whiting and Putty are held at former prices, but there is slight irregularity in quotations on out-of-town brands. For the general line of Clays a quiet and unchanged market is reported.

Oils and Turpentine.

The situation in the market for Animal and Vegetable Oils is practically the same as it was at the date of last week's review. Neither export nor home trade buyers have operated with greater freedom, in the absence of incentive for taking hold liberally, and evidence is wanting of anything more than ordinary effort to expedite business being made by sellers. Hence a somewhat monotonous quietude all through the various lines, and comparatively little movement in values aside from the ordinary variation on small sales from second hands.

Linseed Oil.—Large consumers are placing very few orders at present, although the condition of the market for raw material points to higher rather than lower prices in the future. The purchases by the smaller trade are of routine character and moderate, all told. City crushers offer indifferently, as do agents of out-of-town brands, and the market, therefore, preserves very steady tone in the face of rather dull condition of trade.

Cotton Seed Oil.—Apart from one transaction, involving about 1000 barrels of crude Oil, sold for direct shipment from Southern mill, dealings have been of very commonplace character during the week and almost wholly on home trade account. The sluggish condition of demand has not led to freer offering, however, nor has any sign of inclination to yield anything on prices been manifested. Hence, while quiet, the market preserves remarkably good tone, indicating that the two leading concerns still have supplies practically under their control, yet no greater burden than they can conveniently take care of.

Lard Oil.—Although prices for raw material have receded somewhat from the highest point reached last week, pressers have made no concession in their former figures for prime Oil and the offering of outside brands has neither increased nor revealed any anxiety to sell. It is the fact, however, that jobbers have made the most of the opportunity to realize, thus filling a gap, and the maintenance of present prices depends in a great measure upon the manipulations in the Lard market.

Menhaden Oil.—The "combine" representatives impart no information regarding the fishing except somewhat vague statements to the effect that the catch of fish is still poor and the Oil product moderate. With scarcely any export inquiry the market remains in a flat condition, since home trade outlet has to be depended upon almost entirely while the movement in Pressed and Bleached Oils is so slow that purchases of crude are conducted in an extremely conservative manner.

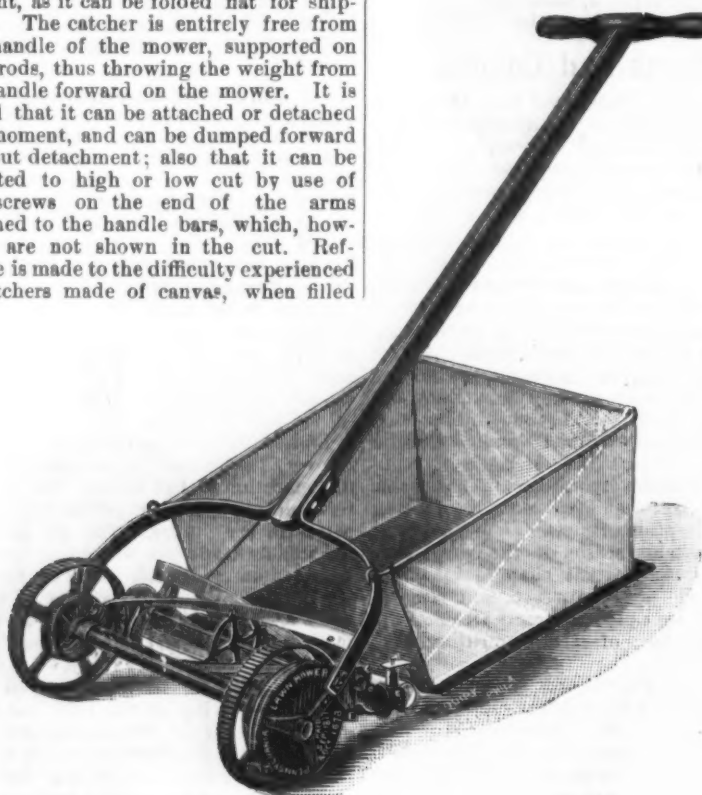
Sperm and Whale Oil.—New Bedford reports note sales of 1300 barrels crude Sperm Oil, part at 68¢, and state that there is practically no stock of Whale in first hands. Superficially at least the market is thus very firm and full former prices for manufactured goods are maintained although merely routine jobbing demand prevails.

Spirits Turpentine.—Shipments from the South have kept this market liberally supplied, but distribution has continued on a scale that prevented any really burdensome accumulation and prices have, therefore, fluctuated within very narrow limits. On latest dealings 30¢ was paid for regular and 30½¢ @ 31¢ for machine barrels.

Braun Grass Catcher.

Supplee Hardware Company, Philadelphia, Pa., are introducing the grass catcher shown in the accompanying cut. It is referred to as being substantially built with galvanized iron bottom and flexible sides, which makes it very convenient, as it can be folded flat for shipment. The catcher is entirely free from the handle of the mower, supported on truss rods, thus throwing the weight from the handle forward on the mower. It is stated that it can be attached or detached in a moment, and can be dumped forward without detachment; also that it can be adjusted to high or low cut by use of set screws on the end of the arms attached to the handle bars, which, however, are not shown in the cut. Reference is made to the difficulty experienced in catchers made of canvas, when filled

as a flower and fruit cutter and rose trimmer. This little tool is alluded to by the company as very desirable for ladies' and florists' use in the greenhouse and among flowers, claiming for it lightness and ease of operation, being as convenient as a pair of scissors, and much more effective,

*Braun Grass Catcher.*

with grass which is slightly damp, as the bottom of the catcher will sag and drag on the ground, thus increasing the friction and making the mower run harder. This trouble has been overcome by the use of the galvanized iron bottom which keeps the catcher firm, and enables it to collect the grass without adding to the resistance of the machine. These catchers are made in all sizes to suit the Pennsylvania, Continental, Great American and New Quaker City lawn mowers, as it was found that no grass catcher could be made to sell at a marketable price that would fit all sizes of lawn mowers satisfactorily. This catcher is referred to as not only fitting the size mower for which it is intended, but also as doing excellent work.

Pruning Shear.

The illustration herewith calls attention to a recent article brought out by the

and that it often takes the place of heavy pruning shears.

Improved Surface Gauge.

The Cincinnati Tool Company, Cincinnati, Ohio, are offering this article, as shown in the accompanying illustration. The special adjustment is a stud fitted to the base of the tool with a fine thread at the upper end and a round knurled nut fitting the screw. A steel spring is also fitted to the stud in the base, holding the nut firmly against the top of the base, and by turning the nut as close an adjustment as is desired can be obtained. The method of adjusting the scriber or needle on the staff and clamping it at the same time is referred to as making this a very desirable tool. This part consists of a loose lug with a hole in it to fit the staff. The lug fits into another piece also on the staff, and two washers with half a hole in each

the staff, and at the same time clamps the washers tightly on the needle, holding, it is stated, all perfectly rigid and tight. An extra long staff is furnished when required. The staff is made tapering and fits in a taper hole in the stud at the bottom, a tap of a hammer being sufficient to drive out the staff or to fasten it firmly in place. The tool is designed especially for both close and rapid work, and also for its durability. It can be shifted by hand closely to the work, and when very close adjustment is required the nut at the bot-

*Improved Surface Gauge.*

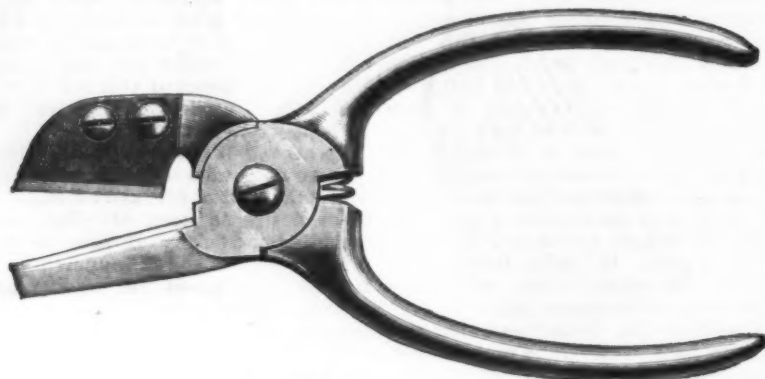
tom of the staff is used. The height of the tool over all is $14\frac{1}{2}$ inches, length of staff 12 inches, length of needle 11 inches. The special adjustment is $\frac{3}{8}$ inch, scratches sideways 10 inches and scratches in height 23 inches. The tools are finished with japanned and nicked bases.

The Eli Campaign Torch.

Norton Bros., 46 River street, Chicago, are putting on the market the campaign torch represented in the accompanying il-

*The Eli Campaign Torch.*

lustration. The peculiar construction of the swivel to which the bail of torch is attached is referred to by the manufacturers as insuring the righting of the torch in any position in which the stick may be held. It is stated that every torch is tested and guaranteed not to leak. The sticks are of Norway pine and very light and strong. The can is $3\frac{1}{8}$ inches in diameter and $4\frac{1}{8}$ inches in height, the length of stick being 5 feet.

*Ladies' Favorite Pruning Shear.*

Alford & Berkele Company, 77 Chambers street, New York. It is called the Ladies' Favorite Pruning Shear, and is intended

for the needle, and a nut to fasten the whole. The turning of the nut brings the loose lug tightly against

Ideal Wad Cutter.

The Ideal Mfg. Company, New Haven, Conn., are introducing the Ideal Wad Cutter for sporting rifles and pistols, as illustrated herewith. Fig. 1 shows the cutter with a section broken away, disclosing the



Fig. 1.—Ideal Wad Cutter.

principle of construction. Fig. 2 gives the calibers covered by the different sized cutters, a separate tool being required for each caliber. This is a new article with them, they having fitted up for its manufacture to supply an increasing demand for an accurate and reliable wad cutter.

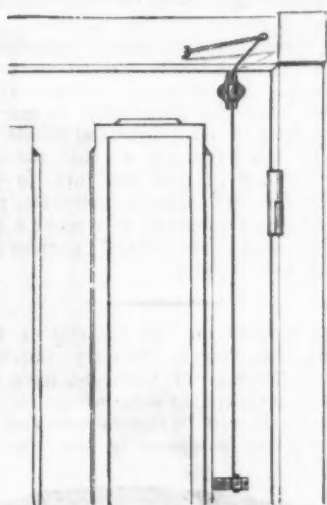


Fig. 2.—Showing Calibers that Can be Cut.

These wad cutters are guaranteed by the company to cut true to the size for which they are intended.

Peabody Door Spring.

The Wire Goods Company, Worcester, Mass., have just brought out a new door spring, as illustrated herewith. Among the desirable features enumerated by them are, that it is inexpensive and scientific, being designed for use on both screen and house doors. The following points of excellence are referred to: The spring exerts the greatest power at the latch, prevents slamming to a great extent, will not allow



Peabody Door Spring.

the door to sag open, and tension can be increased by taking up a link or two on the chain, while tension can be released instantly by unhooking chain. It is stated that doors can be removed by unhooking chain and lifting off the hinges, the spring remaining in position to be applied the moment the door is put back. The springs can be put on either inside or outside the door. Attention is called to the fact that with the assistance of a screw driver and bradawl they can be applied by any one.

The Handy Dust Pan.

S. F. Bowser & Co., Fort Wayne, Ind., are manufacturing the novel dust pan represented in the accompanying illustration.



Fig. 1.—The Handy Dust Pan.

Fig. 1 represents the pan itself, while Figs. 2 and 3 show the manner in which the pan is combined with broom,



Fig. 2.—Front View of Pan and Broom Combined.

gation. It is stated that the open handle of the pan, as shown, having some spring



Fig. 3.—Back View of Pan and Broom Combined.

to it, will fit the different sized broom handles tightly, thus preventing any rattling when sweeping. The manufacturers

make the point that the pan is always at hand when wanted, its place being on the broom, as indicated. When sweeping is being done and the dust pan is wanted from time to time the convenience of its position is referred to, it being easy to get at and readily replaced after using. This pan is stamped out of one piece, and being well corrugated and cross-creased is referred to as very firm and strong, although light material is used in its construction. The manufacturers refer to the advantage in shipping these pans, as their shape is such that they nest very compactly, thus securing a low shipping rate.

Surprise Tubular Lanterns.

The Ohio Lantern Company, Tiffin, Ohio, have recently introduced the Surprise Dash Tubular Lantern, as shown in

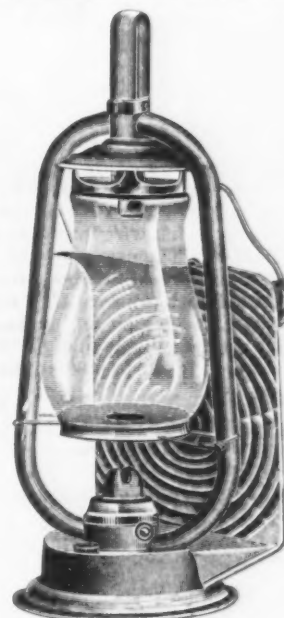


Fig. 1.—Surprise Dash Tubular Lantern, Open.

Fig. 1, alluding to it as their best lantern. Among the desirable features claimed is an automatic lift, a cushion spring globe



Fig. 2.—Surprise Hood Reflector Dash Lantern, Open.

holder and a detachable reflector that can be instantly detached, thus converting it into a complete hand lantern. The point is also made that it will take any No. 0 tubular globe. Fig. 2 illustrates their

Surprise Hood Reflector Dash Lantern, which is furnished with plain or bull's-eye globe, and has the company's patent automatic lift for raising globe to trim and light, also cushion spring globe holder, and is fitted with a 5 inch silvered reflector, giving, we are told, a strong, bright light.

Billings Wire Cutter.

The accompanying illustration represents the Billings Wire Cutter, as made by the

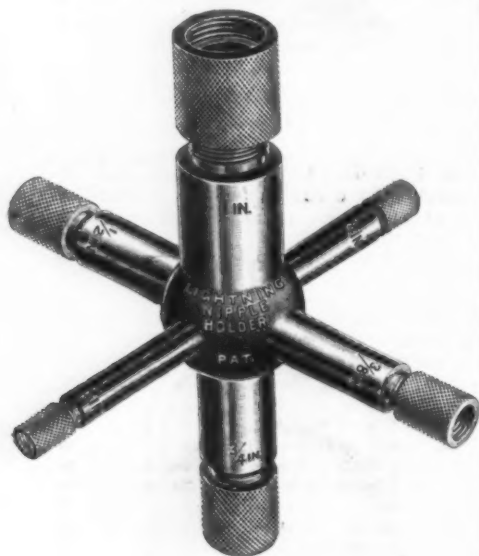


Billings Wire Cutter.

Billings & Spencer Company, Hartford, Conn., a device which is especially designed for the use of those connected with electrical industries, or any of the many operations in which wire forms so important a feature. The company refer to it as drop forged from the best tool steel, and provided with four cutting edges on the rim, and two which are inclosed. It also has an adjustable gauge so that wire can be accurately cut to any length. Total length of tool is 10 inches.

Nipple Holder.

Wiley & Russell Mfg. Company, Greenfield, Mass., are introducing a nipple holder, as illustrated herewith. Any one of

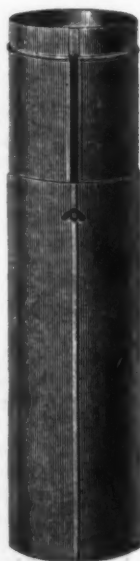


Nipple Holder.

the arms may be grasped in a vise to bring a required size into position. In operation the nipple is made up in the coupling as far as it can readily be screwed with the fingers, and the coupling is then run down until the nipple stops against the plug, when it is ready to be cut. It is stated that afterwards it can be taken out without trouble. The holder is designed for the use of pipers and steam fitters, to hold nipples at one end while they are threaded without injuring the thread at the other end of the nipple. The form of the tool is referred to as preventing the loss or scattering of the nipple holders. The tool measures 9 inches across and weighs 4½ pounds.

Telescopic Stove Pipe.

We illustrate herewith a novel form of stove pipe, as made C. Lehman, Elgin, Iowa. It is called a telescopic stove pipe, and consists of two joints of pipe, one fitting in the other, the inner one having a slot so constructed that a bolt compressed or loosened by a thumb screw on the outer pipe holds the inner pipe at any height. When the inner pipe is fully pulled out two joints of pipe are formed, one only being formed when the inner pipe



Telescopic Stove Pipe.

is pushed to the bottom. Any intermediate length may be had at will and the pipe is

The A. & B. Tack Puller.

The Alford & Berkele Company, 77 Chambers street, New York, are offering to the trade the A. & B. Tack Puller, as shown in the cut above. The method of operation is to place the puller over a tack and by pulling forward increasing the hold



A. & B. Tack Puller.

on the tack and getting a sufficient purchase to raise it by means of a long arm attached to one of the jaws. The pullers are packed two dozen in a box and four gross in a case.

Potato Digging Fork.

Withington & Cooley Mfg. Company, Jackson, Mich., have put on the market the fork illustrated herewith. The company state that the increasing use in



Potato Digging Fork.

potato digging of forks rather than hooks has caused them to devise and make a fork expressly for the purpose. This fork is provided with heavy round tines and points, which are referred to as not too sharp. It was made, it is mentioned, last fall upon the ideas of a farmer and successfully tested in practical potato digging by other farmers, so that the company decided to add the fork to their regular line. The manufacturers also point out that the implement will make a good digging fork for general purposes in ground not too hard.

The tenants on the property on Fifth avenue, Pittsburgh, recently purchased by Mrs. Thomas M. Carnegie, have been notified to vacate the same within the next 60 days. It will be remembered that this property was purchased by Mrs. Carnegie

some time since for the purpose of erecting on it a large office building to be occupied almost exclusively by the Carnegie Steel Company, Limited. The plans for the new building have not yet been fully de-

cided upon. Work will be commenced as soon as the present buildings now located on the property have been vacated.

The Vosburgh Floor Sleeve.

N. O. Nelson Mfg. Company, St. Louis, Mo., are offering this article, as illustrated in the accompanying cuts. It is made of



Fig. 1.—The Vosburgh Floor Sleeve.

cast iron and is referred to as possessing strength, lightness, rigidity and symmetry. It is composed of two sections, which telescope on a coarse, deep thread, so as to allow it to be readily and instantly adjusted to various widths of joist. The point is made that the sections turn so freely upon their threads that no tool is required to adjust the sleeve to any position in which it is to serve.

It is designed as an insulation for steam pipes to keep them from coming into contact with the wood of floors or parti-

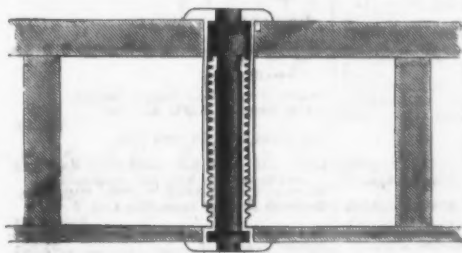


Fig. 2.—Application of the Floor Sleeve.]

tions. It may also be used where partitions or walls are to be pierced for extending pipes, hose, shafting, wires, ropes, chains, &c. The flanges are referred to as making an exceptionally neat finish at the floor or ceiling, and as giving an air of solidity and permanency. The sleeves are made in two lengths, from a minimum length of 9 inches to a maximum length of 16 inches, and from 15 to 22 inches. In inside diameter they are made in nine sizes to receive pipe whose outside diameter is from $\frac{1}{4}$ to 4 inches.

Stevens' Favorite Rifle.

J. Stevens Arms & Tool Company, Chicopee Falls, Mass., are offering a rifle,

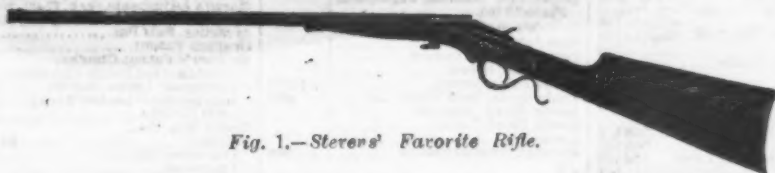


Fig. 1.—Stevens' Favorite Rifle.

as shown in the accompanying illustrations. The Favorite weighs 4½ pounds, and is made for the 22 caliber long rifle cartridge, and for the 25 caliber rim fire Stevens special cartridge. In the 22 cali-

ber can be used any rim-fire cartridge of this caliber, including all the breech caps. The barrels are 22 inches long, while the action has a strong case-hardened frame, and a strong solid breech block which, when thrown down or by closing, brings the hammer to half cock. The bringing the hammer only to half cock prevents the accidental discharge of the rifle. When the lever is down an unobstructed view of the inside of the barrel of the rifle can be had and the rifle may be easily cleaned from the breech end. The stock is finely modeled and has a shot-gun butt. The barrel is

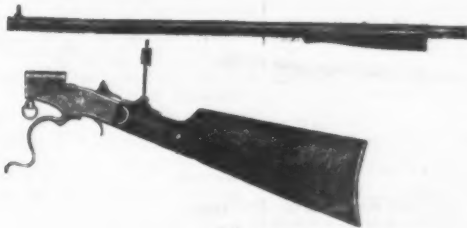


Fig. 2.—Favorite Rifle Taken Apart.

detachable and can be removed in a few seconds by loosening the screw which is just back of the forestock, which is arranged with a ring through its head, so it can be operated by the fingers, as shown in Fig. 2; this done, the barrel is slipped forward out of the action and the whole rifle can be packed in a very small space. The aim of the company was to produce a strong and thoroughly made rifle, perfect in symmetry, safe, accurate and portable, at a price as low as possible to give good work, and in firing it has proved as accurate as the more expensive rifles made by this company.

Eastern Kentucky coal fields have received considerable impetus in the influx of enormous capital from abroad. The Breckenridge and Pineville syndicate (Limited) of England have recently acquired possession by lease, with option to buy, the east and west properties of the Cumberland Valley Colliery Company, about 1100 acres in all, of the finest deposits in the State of bituminous coal. This is a splendid coking coal and is found in a continuation of the range of the Pocahontas fields. Besides the soft coal the company have excellent veins of cannel coal, which is scarcely inferior to the celebrated Breckenridge cannel, which latter has for years been exported to England exclusively. The Breckenridge Company (Limited), whose mines are in the county of this name on the Ohio River, near Cloverport, will operate both companies. Wm. Hopper is agent for the Breckenridge Company, Limited, and trustee of the new syndicate. His office is in the Kentucky National Bank Building, and he will supply the gas companies through the West and South with cannel coal for enriching gas. The Pineville cannel analyzes 55.10 per cent. volatile matter, 44.90 per cent. coke, and has only 22.20 per cent. ash in coal. This is commonly called the Pineville "bog head" cannel, and is found in large pockets on

the company's property. The syndicate is spending a great deal of money on improvements to facilitate mining and shipping, and has unlimited capital to perfectly develop the property.

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CURRENT HARDWARE PRICES.

JULY 13, 1892.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.

Adjusters, Blind.

Domestic..... \$ dos 33.00, 33.45
Excelsior..... \$ dos 10.00..... 50¢100.25
North's..... List net 40¢
Zimmerman's—See Fasteners Blind.

Ammunition—See Caps, Cartridges, Shells, &c.

Anvils.

Eagle Anvil, \$ 10..... 15¢15.25
Peter Wright's..... 11¢11.15
Armstrong's House Hile..... 10¢10.15
Am. Wrought, Horseshoe brand, 11¢11.15
Trenton..... 10¢10.15
Wilkinson's..... 10¢10.15
Moore & Barnes Mfg. Co..... 33¢33.45

Anvil Vise and Drill.

Millers Falls Co., \$18.00..... 20¢
Cheney Anvil and Vise..... 25¢
Allen Anvil and Vise, \$3.00..... 40¢10.45
Star..... 45¢45.25

Apple Parers—See Parers, Apple, &c.

Augers and Bits.

Douglas Mfg. Co..... 40¢40.10
Wm. A. Ives & Co..... 30¢30.10
Humphreysville Mfg. Co..... 30¢30.10
French, Swift & Co. (F. H. Beecher, F. S. & W. Co.)..... 30¢30.10
Rockford Bit Company..... 30¢30.10
Cook's, Douglas Mfg. Co..... 30¢30.10
Cook's, N. H. Copper Co., \$0.40..... 30¢30.10
Ives' Circular Lip..... 30¢30.10
Patent Solid Head..... 30¢30.10
O. E. Jennings & Co., No. 10, extension lip..... 40¢40.10
O. E. Jennings & Co., No. 30..... 30¢30.10
O. E. Jennings & Co., Auger Bits, \$ set, 32 1/2 quaters, No. 5, \$2; No. 30, \$3.50, 30¢
Lewis' Patent Single Twist..... 45¢45.10
Russell Jennings' Augers and Bits, 32 1/2 quaters, \$2.50..... 30¢30.10
Imitation Jennings' Bits..... 30¢30.10
Fugh's Black..... 30¢30.10
Fugh's Jennings' Pattern..... 30¢30.10
Car Bits..... 30¢30.10
Car Bits, F. S. & W. Co..... 30¢30.10
Snell's Car Bits..... 30¢30.10
H. Homodieu Car Bits..... 30¢30.10
Forester Pat. Auger Bits..... 30¢30.10
Cincinnati Bell-Hangers' Bits..... 30¢30.10

Bit Stock Drills.

More Twist Drills..... 60¢10.25
Standard..... 60¢10.25
Cleveland..... 60¢10.25
Syracuse, for wood (wood lip), 30¢30.25
Cincinnati, for wood..... 30¢30.25
Cincinnati, for metal..... 45¢45.10

Expansive Bits.

Clark's small, \$15; large, \$25, 35¢35.10
Ives' No. 4, \$ dos 30.00..... 40¢40.10
Swan's..... 40¢40.10
Steer's, No. 1, \$2; No. 2, \$2.25..... 35¢35.10
Stearns' No. 4, \$48..... 30¢30.10

Gimlet Bits.

Common..... \$ gross 22.75, 22.25
Diamond..... \$ dos 12.25..... 4¢10.25
See..... 35¢35.25
Double Cut, Richardson's..... 45¢45.10
Double Cut, Ct. Valley Mfg. Co..... 30¢30.10
Double Cut, Hartwell's..... 45¢45.10
Double Cut, Douglas's..... 40¢40.10
Double Cut, Ives'..... 30¢30.10

Hollow Augers.

Ives..... 33¢33.45
French, Swift & Co..... 33¢33.45
Douglas's..... 30¢30.10
Bonney's Adjustable, \$ dos 48..... 40¢40.10
Ives' Expansive, each \$4.50..... 30¢30.10
Universal Expansive, each \$4.50..... 30¢30.10
Wood's..... 30¢30.10
Cincinnati Adjustable..... 25¢25.10
Cincinnati Standard..... 35¢35.10

Ship Augers and Bits.

L'Honniedieu's..... 15¢10.15
Watrous'..... 15¢10.15
Snell's..... 15¢10.15
Snell's Ship Auger Pat'n Car Bits, 15¢10.15

Awl Hafta—See Hafta, Awl.

Awls.

Awls, Sewing, Common..... \$ gr. 85¢80.05
Awls, Should. Peg..... \$ gr. 1.00, 1.55
Awls, Pat. Peg..... \$ gr. 55¢38.55
Awls, Shouldered Brad..... \$ gr. 1.30, 1.40
Awls, Handled Brad..... \$ gr. 2.50, 3.00
Awls, Handled Scratch..... \$ gr. 4.00, 4.50
Awls, Socket Scratch..... \$ dos 1.10, 1.50

Awl and Tool Sets—See Sets, Awl and Tool.

Axes.

First quality, best brands, \$7.00 @ \$7.50
First qual., other brands..... 6.75
Second quality..... 6.00 6.50

Axle Grease—See Grease, Axle.

Axles.

No. 1, \$4.00, No. 2, \$3.00, 8¢ cash
Nos. 7 to 14..... 60¢10.5
Nos. 15 to 18..... 47¢4.75
Nos. 19 to 22..... 70¢7.05
Concord Axles, loose collar..... 4¢4.05
Concord Axles, solid collar..... 6¢6.05
National Tubular Self-Oiling..... 35¢35.25

Bag Holders—See Holders, Bag.

Balances.

Spring Balances..... 40¢
No. 2000, 20 30
Chatillon, \$ dos..... 30.50 0.95 1.75 net
Chatillon Straight Balances..... 40¢40.10
Chatillon Circular Balances..... 50¢50.15

Barb Wire.—See Wire, Barb.

Bars.

Cast Steel..... \$ 3 3/4
Iron, Steel Points..... \$ 3 3/4

Basins, Wash.

Standard Fiberglass, No. 1, 10 1/2-inch, \$2; 12-inch, \$2.25; 13 1/2-inch, \$2.75; 15-inch, \$3.25.

Beams, Scale.

Scale Beams, List Jan. 12, '82..... 50¢10.05

Chatillon's No. 1..... 40¢
Chatillon's No. 2..... 50¢
Custer's..... 35¢35.25

Beaters.

Dover..... \$ dos 1.50

Duplex (Standard Co.)..... \$ dos 1.35

Rival (Standard Co.)..... \$ dos 1.00

Duplex Extra Heavy (Standard Co.)..... \$ dos 2.50

Bryant's..... \$ gro 2.00

Double (H. & R. Mfg. Co.), \$ gro. No. 0, \$12.00; No. 1, \$15.00; No. 2, \$18.00

Easy (H. & R. Mfg. Co.)..... \$ gro 12.00

Triple (H. & R. Mfg. Co.)..... \$ gro 10.50

Spiral..... \$ gro 4.25 @ 4.50

Improved Acme (H. & R. Mfg. Co.)..... \$ gro 3.00

Paine, Diehl & Co.'s..... \$ gro 2.00

Silver & Co..... \$ dos 2.50

Culinary.

Keystone, P.D. & C., Each, No. 1, \$1; No. 2, \$2..... 30¢

Bells.

Common Wrought..... 60¢10.25

Western, Sargent's list..... 70¢10.25

Kentucky, "Star"..... 30¢10.25

Kentucky, Sargent's list..... 70¢10.25

Kentucky Durham..... 70¢10.25

Dodge, Genuine Kentucky..... 70¢10.25

Texas Star..... 50¢10.25

Door.

Gong, Abbe's..... 35¢10.25

Gong, Yankee..... 45¢10.25

Gong, Barton's..... 40¢10.25

Gong, Taylor's..... 25¢10.25

Crane, Taylor's..... 50¢10.25

Crane, Cooke's..... 50¢10.25

Crane, Cone's..... 10¢

Crane, Connel's..... 30¢10.25

Lever, Sargent's..... 60¢10.25

Lever, Taylor's, Bronzed or Plated..... 10¢

Lever, Taylor's, Japaned..... 50¢10.25

Lever, R. E. M. Co.'s..... 50¢10.25

Pull, Brook's..... 50¢10.25

Electric.

Wollensak's..... 20¢

Higlow & Downe..... 20¢

Taylor's..... 30¢

Head.

Light Brass..... 70¢10.25

Extra Heavy..... 70¢

White..... 70¢

Silver Chime..... 35¢10.25

Globe Cone's Patent..... 25¢10.25

Miscellaneous.

Call..... 40¢40.25

Farm Bells..... \$ 3 3/4

Steel Alloy Church and School Bells..... 40¢

Bellows.

Blacksmith's..... 60¢10.25

Molders'..... 40¢10.25

Hand Bellows..... 40¢10.25

Belting, Rubber.

Common Standard..... 70¢10.25

Standard..... 70¢10.25

N.Y.B. & P. Co., Carbon..... 30¢

N.Y.B. & P. Co., Diamond..... 50¢

N.Y.B. & P. Co., Para..... 40¢

Bench Stops—See Stops, Bench.

Benders and Upsetters, Tire.

Stoddard's Lightning Tire Upsetter..... 1.25

Detroit Perfected Tire Bender..... 1.25

Bits.

Auger, Gimlet, Bit Stock Drills, &c., see Augers and Bits.

Bit Holders—See Holders.

Blind Adjusters—See Adjusters, Blind.

Blind Fasteners—See Fasteners, Blind.

Blind Staples—See Staples, Blind.

Cleveland Block Co., Mal. Iron 50¢50.10

Moore's Novelty, Mal. Iron..... 25¢

Sure Grip Steel Tackle Blocks..... 25¢

Boards, Stove.

Wood Lined Crystal..... 50¢

Oxidized..... 40¢

Embossed..... 50¢

Paper Lined Zinc..... 55¢

Crystal..... 55¢

Embossed..... 55¢

New Tacoma..... 55¢

Boils.....

Carriage, Machine, &c.....

Com. list June 10, '84..... 75¢10.25

Genuine Eagle, Norway, list Oct. '84..... 80¢10.25

R.B. & W., old list..... 70¢

Machine, list Jan. 1, 1890..... 80¢10.25

Bolt Ends, list Jan. 1, 1890..... 75¢10.25

Door and Shutter.....

Cast Iron Barrel, Square, &c..... 70¢10.25

Cast Iron Shutter Bolts..... 70¢10.25

Cast Iron Chain (Sargent's list)..... 55¢10.25

Ives' Patent Door Bolts 60¢10.25

Wrought Barrel..... 70¢10.25

Wrt Shutter, all Iron, Stanley's..... 60¢10.25

Wrt Shutter, Brass Knob..... 40¢10.25

Wrt Shutter, Sargent's list..... 60¢10.25

Wrt Sunk Flush, Sargent's list..... 65¢10.25

Wrt Sunk Flush, Stanley's list..... 50¢10.25

Wrt R.E. Flush, Com'ry..... 55¢10.25

Stove and Flow.

Stove..... 60¢

Flow..... 60¢25

R. B. & W., Flow..... 55¢

Tire.

Common, list Feb. 28, '83..... 55¢

Port Chester Bolt and Nut Company..... 55¢

Empire, list Feb. 28, '83..... 55¢

Keystone, Philadel., list Oct. '84..... 80¢

Norway, Phila., list Oct. '84..... 75¢

American Screw Company..... 75¢

Norway, Phila., list Oct. '84..... 75¢

Eagle, Phila., list Oct. '84..... 80¢

Philadel., list Oct. '84..... 80¢

Bay State, list Feb. 28, '83..... 55¢

R.B. & W., Philadel., list Oct. '84..... 80¢

Borers, Tap.

Common and Ring..... 30¢10.15

Ives' Tap Borer..... 35¢10.15

Katherine Mfg. Co..... 30¢10.15

Clark's..... 33¢10.15

Borax..... \$ 9 1/4 @ 10 1/4

Boring Machines—See Machines, Boring.

Bow Pins—See Pins, Bow.

Bowes, Wagon.

Per 2..... 34¢

Braces.

American Bit Brace Co.:
Nos. 10, 12, 20..... 60¢10.25

Nos. 11, 21, 24, 27..... 70¢10.25

Nos. 22, 23, 25..... 80¢10.25

Nos. 13, 30, 35, 37..... 70¢10.25

Ball Braces, net..... \$1.12 to \$1.25

Amidon's.

Barker's Imp'd Plain..... 75¢10.25

Barker's Imp. Nickel..... 65¢10.25

Ratchet..... 75¢10.25

Eclipse Ratchet..... 60¢10.25

Globe Jawed..... 60¢10.25

Corner Brace..... 40¢10.25

Universal, 8 in., \$2.10; 10 in., \$2.35

Buffalo Ball..... \$1.10 @ \$1.11

Barber's.

Nos. 10 to 16..... 50¢10.15

Nos. 30 to 32..... 60¢10.15

Nos. 40 to 55..... 50¢10.25

Saxon's.

Barker's Imp. Polished..... 75¢10.25

Barker's Imp. Nickel..... 65¢10.25

Ratchet, Polished..... 60¢10.25

Ratchet, Nickel..... 40¢10.25

Bartholomew's..... net, \$1.10 @ \$1.15

Nos. 25, 27 and 30..... 60¢10.25

Nos. 117, 118, 119..... 70¢10.25

Common Ball, American..... \$1.00 @ \$1.10

Fray's Genuine Spofford's..... 50¢10.25

Fray's No. 70 to 120, 51 to 125, 307 to 414

Ives' New Haven Novelty..... 70¢10.25

New Haven Ratchet..... 60¢10.25

Barber Ratchet..... 60¢10.25

Barbers..... 60¢10.25

Spofford..... 60¢10.25

Corood's Ratchet..... 40¢10.25

P. B. & W. Co., Peck's Patent..... 50¢

Clamps—

R. L. Tool Co.'s Wrought Iron.....	25¢
Adjustable, Cincinnati.....	15¢10¢
Adjustable, Hammers.....	15¢
Adjustable, Stearns.....	30¢30¢10¢
Stearns' Adjustable Cabinet and Cor-	ner.....
Cabinet, Sargent's.....	70¢10¢
Carriage Makers'.....	40¢10¢
Carriage Makers' P. S. & W. Co.....	40¢10¢
Eberhard Mfg. Co.....	40¢10¢40¢10¢
Warner's.....	40¢10¢40¢10¢
Saw Clamps, see Vices, Saw Filers.....	
Carpenters, Cincinnati.....	35¢10¢

Cleavers.

Butchers'.....	
Bradley's.....	35¢30¢
L. & J. White.....	20¢25¢
Beatty's.....	40¢40¢25¢
New Haven Edge Tool Co.'s.....	40¢
P. S. & W.....	30¢40¢30¢10¢
Poster Bros.....	30¢
Schulte, Lohoff & Co.....	40¢40¢25¢

Clips—

Norway, Axle, 4 & 5-16.....	55¢55¢
and grade Norway Axle, 4 & 5-16.....	65¢65¢
Superior Axle Clips.....	60¢55¢70¢
Norway Spring Bar Clips, 5-16.....	50¢55¢
Wrought-Iron Felice Clips.....	5¢
Steel Felice Clips.....	5¢
Baker Axle Clips.....	35¢

Cloth and Netting, Wire—See Wire, &c.

Cocks, Brass.

Hardware list.....	50¢25¢
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Coffee Mills—See Mills, Coffee

Cellars, Dog, &c.

Chapman Mfg. Company.....	50¢10¢60¢
Madford Fancy Goods Co.....	40¢10¢50¢
embossed, Gilt, Pope & Steven's list.....	30¢10¢
Leather, Pope & Steven's list.....	40¢
Brass, Pope & Steven's list.....	40¢

Combs, Curry.

Fitch's.....	50¢10¢50¢10¢10¢
Rubber, per doz.....	10¢00¢
American Curry Comb Co.....	Net prices

Compasses, Dividers, &c.—

Compasses, Calipers, Dividers.....	70¢70¢10¢
Bemis & Call Co.'s.....	
Dividers.....	60¢25¢
Compasses & Calipers.....	50¢25¢
Wing and Inside or Outside.....	50¢25¢
Double.....	80¢
(Call's Pat. Inside).....	30¢
Excelsior.....	30¢
J. Stevens & Co.'s.....	35¢10¢
Spring Calipers and Dividers.....	25¢10¢
Lock Calipers and Dividers.....	25¢
Combination Dividers.....	25¢

Coopers' Tools—See Tools, Coopers'.

Cord—

Sash.....	
Common.....	10¢ @ 11¢
Patent, good quality.....	10¢ @ 11¢
White Cotton Braided, fair.....	24¢25¢
Common Russia Sash.....	12¢12¢
Patent Russia Sash.....	12¢ @ 14¢
Cable Laid Italian Sash.....	21¢22¢
India Cable Laid Sash.....	12¢
Silver Lace.....	
A Quality, White, 50¢.....	25¢
B Quality, White, 50¢.....	25¢
C Quality, White, 50¢.....	10¢
D Quality, White, 50¢.....	10¢
Sylvan Spring, Extra Braided White, 30¢	
Sylvan Spring, Extra Braided, Drab, 30¢	
Semper Idem, Braided, White, 30¢	
Egyptian, India Hemp, Braided, 30¢	
Massachusetts, White, 30¢	
Samson.....	
Braided, White Cotton, 50¢.....	30¢30¢25¢
Braided, Drab Cotton, 50¢.....	30¢30¢25¢
Braided, Italian Hemp, 50¢.....	30¢30¢25¢
Braided, Linen, 50¢.....	30¢30¢25¢
Tate's Cotton Braided, White, 50¢.....	25¢10¢
Wire Ropes.....	75¢10¢
Braided or Twisted.....	75¢10¢

Corkscrews—See Screws, Cork.

Corn Knives and Cutters—See Knives, Corn.

Crackers, Nut—

Table (H. & B. Mfg. Co.).....	40¢
Blake's Pattern.....	50¢
Turner & Seymour Mfg. Co.....	50¢

Cradles—

Cradles.....	50¢25¢30¢10¢25¢
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Crays.

White Crays, 5 gross.....	10¢
D. M. Stewart Mfg. Co., Metal Work-	ers, 5 gr, \$2.50.....
D. M. Stewart Mfg. Co., Rolling Mill,	5 gr, \$2.50.....
See also Chalk.....	

Crown Bars—See Bars, Crow.

Curry Combs—See Combs, Curry.

Curtain Pins—See Pins, Curtain.

Cutters—

Olson's 7 dos.....	40¢25¢
Nos.....	1 2 3 4 5 6
Each.....	\$1.00 \$1.70 \$1.20 \$3.00
Woodruff's 7 dos.....	40¢25¢
Nos.....	100 150
Stable Pattern 7 dos.....	15¢10¢
Nos.....	70¢70¢25¢
Each.....	\$2.70 \$3.00 \$4.00

American.....

Nos.....	1 2 3 4 5 6
Each.....	\$5 \$7 \$10 \$25 \$50 \$80
terprise.....	10 12 22 32 42
Each.....	\$3 \$2.50 \$4 \$5 \$15
at American Heat Cutter.....	30¢
Nos.....	112 116 118 120 122
Each.....	\$2.00 \$2.75 \$3.00 \$2.50 \$4.00

Miles' Challenge 7 dos.....

Nos.....	1 2 3
Each.....	\$32.00 \$30.00 \$40.00
Home No. 1.....	50¢

Draw Out, each:

Nos.....	5 2 6 8
Each.....	\$50 \$75 \$80 \$125
Beef Shavers (Enterprise).....	30¢10¢50¢
Little Giant (P. S. & W. Co.).....	60¢
Chadborn's Smoked Beef Cutter, 50¢	
Each.....	\$50.00

Tobacco.

Champion.....	30¢10¢30¢
All Iron.....	5¢
Nashua Lock Co.'s.....	5¢
Wilson's.....	5¢
Sargent's.....	5¢
Acme.....	5¢

Washer.

Smith's Pat.....	5¢
Johnson's.....	5¢
Penny's.....	5¢
Appleton's.....	5¢
Bonney's.....	5¢
Cincinnati.....	5¢

Dampers, &c—

Dampers, Buffalo.....	40¢10¢
Buffalo Damper Clips.....	40¢
Crown Damper.....	40¢
Excelsior.....	40¢10¢

Diggers, Post Hole, &c—

Samson Post Hole Digger, 50¢	
Each.....	\$36.00
Fletcher Post Hole Augers, 50¢	
Each.....	\$36.00
Eureka Diggers.....	50¢
Each.....	\$12.50 \$14.00
Leed's.....	50¢
Vaughan's Post Hole Auger.....	50¢
Each.....	\$12.00 \$14.00
Kohler's Little Giant.....	50¢
Each.....	\$18.00
Kohler's Hercules.....	50¢
Each.....	\$18.00
Kohler's New Champion.....	50¢
Each.....	\$18.00
Schneider.....	50¢
Each.....	\$18.00
Ryan's Post Hole Diggers.....	50¢
Each.....	\$24.00
Crank's Post Bar.....	50¢
Each.....	\$50.00
Gibbs Post Hole Digger.....	50¢
Each.....	\$15.00
Imperial.....	50¢
Each.....	\$7.50
Shimer's Hollow Handle.....	50¢
Each.....	\$24.00

Dividers—

See Compasses.	
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Dog Collars—See Collars, Dog, &c.

Door Springs—See Springs, Door.

Drawers.

Money, 7 dos.....	\$18¢20¢
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Drawing Knives—See Knives, Drawing.

Drills and Drill Stocks—

Blacksmiths'.....	each \$1.75
Blacksmiths' Self-Feeding, each.....	\$7.50 \$9.00
Breast, P. S. & W.....	40¢10¢
Breast, Wilson's.....	30¢25¢
Breast, Millers Falls.....	each \$3.00, 25¢
Breast, Bartholomew's.....	each \$2.50, 25¢
Ratchet, Merrill's.....	20¢20¢25¢
Ratchet, Ingersoll's.....	25¢
Ratchet, Parker's.....	30¢20¢25¢
Ratchet, Whitney's.....	30¢10¢
Ratchet, Weston's.....	30¢25¢
Ratchet, Moore's Triple Action.....	35¢30¢
Ratchet, Curtis & Curtis.....	30¢
Whitney's Hand Drill, Plain.....	\$11.00
Adjustable.....	\$12.00
Wilson's Drill Stocks.....	10¢
Automatic Boring Tools.....	\$1.75¢1.50
Twist Drills.....	
Cleveland.....	50¢10¢25¢
Diamond, W. & B.....	50¢10¢25¢
Graham's Pat. Groove Shank.....	50¢10¢25¢
More.....	50¢10¢25¢
New Process.....	50¢10¢25¢
Standard.....	50¢10¢25¢
Syracuse (Metal Net).....	50¢10¢

Drill Bits or Bit Stock Drills—

See Augers and Bits.

Drill Chucks—See Chucks.

Dripping Pans—See Pans, Dripping.

Drivers, Screw.

Douglas Mfg. Co.....	30¢30¢10¢
Dixon's.....	50¢
Buck Bros.....	50¢
Stanley B. & L. Co.'s.....	50¢
No. 64, Varnished Handles.....	65¢10¢
No. 80.....	70¢10¢
Sargent & Co.'s.....	
No. 1 Forged Blade.....	60¢10¢10¢
Nos. 20, 30 and 50.....	60¢10¢10¢
P. S. & W.....	70¢

Knapp & Cowles:

No. 1.....	60¢20¢70¢
No. 2.....	60¢10¢10¢70¢25¢
No. 3.....	60¢25¢60¢10¢
Nos. 4 and 60, Acme and Ideal.....	50¢

Stearns'.....

Gay & Parsons.....	35¢
Champion.....	25¢10¢
Clark's Pat.....	30¢30¢35¢
Crawford's Adjustable.....	30¢
Ellrich's Socket and Ratchet.....	35¢35¢10¢
Allard's Spiral, new list.....	25¢
Kohl's Common Sense.....	50¢50¢35¢10¢
Syracuse Screw-Driver Bits.....	30¢30¢25¢
Screw-Driver Bits.....	50¢75¢
Screw-Driver Bits, Parr's.....	50¢
Pray's Hol. Hdl. Seta.....	No. 3 \$15.00, 45¢
P. D. & Co.'s all Steel.....	50¢
Cincinnati.....	35¢10¢
Brace Screw Drivers.....	35¢10¢
Buck Bros' Screw-Driver Bits.....	35¢10¢

Egg Beaters—See Beaters, Egg.

Egg Poachers—See Poachers, Egg.

Electric Bell Seta—See Bells, Elec-

trical.

Emery.—No. 4 to No. 54 to Flour OF

40 gr.....	150 gr.....	P. F. F.
Each.....	5¢	25¢
40 grs, 5¢.....	5¢	25¢
40 grs, 5¢.....	5¢	25¢
10-3 cans, 10¢		
in case, 10¢	5¢	5¢
10-3 cans, less		
than 10.....	10¢	

Enameled and Tinned Ware—

See Ware, Hollow.

Escutcheons Pins—See Pins, Es-

cutcheons.

Escutcheons.

Door Lock.—Same dis as Door Locks.

Brass Thread.....

Wood.....

Expanded Metal.

List No. 5.

Lathing.....

Fencing, Painted Sheets.....

Netting, Painted Sheets.....

Door Mats, Galvanized.....

Window Guards, Painted.....

Tree Guards, Painted.....

Extractors, Lemon Juice—See

Squeezers, Lemon.

Fasteners, Blind—

Mackrell's, 50¢.....

Van Sand's Screw Pat., 15¢.....

Van Sand's Old Pat., 15¢.....

Austin & Eddy No. 2008.....

Security Gravity, 5¢.....

Zimmerman's.....

Faucets.—

Fenn's.....

Bohren's Pat. Rubber Ball.....

Fenn's Cork Stops.....

Star's.....

Fraser's Pat. Petroleum.....

B. & L. B. Co.....

West's Lock, Open and Shut Key.....

Star, Metal Plug, new list.....

Lockport, Metal Plug, reduced list.....

Metallic Key, Leather Lined.....

Cork Lined.....

Burnside's Red Cedar.....

Burnside's Red Cedar, bbl lots.....

John Sommers'.....

Peerless Best Block Tin Key.....

Diamond quality, Cork Lined.....

Diamond Lock.....

Perfection, Fla. Red Cedar.....

Goodenough Cedar.....

Boss Metallic Key.....

Reliable Cork Lined.....

Western Pattern Cork Lined.....

Self-Measuring.....

Enterprise, 50¢.....

Lane's, 50¢.....

Victor, 50¢.....

Felloe Plates—See Plates, Felloe.

Fifth Wheels.—

Derby and Cincinnati.....

Browster.....

Files—

Domestic—

Nicholson Files, Rasps, &c.....

Nicholson (X. F.) Files.....

Nicholson's Royal Files (Second).....

(extra prices on certain sizes)

G. & H. Barnett (Black Diamond).....

Arcade.....

Eastie.....

Other makes, best brands.....

Fair brands.....

Second quality.....

Heller's Horse Rasps.....

McCaffrey's Horse Rasps.....

Cheese or Rasp, Hand Cut.....

Arcade or Rasp.....

Butcher's list, 25¢.....

Stubs.....

Fixtures.

Grindstones—

Sargent's Patent.....

Reading Hardware Co.....

P. S. & W. Co.....

Fluting Machines—See Machines, Fluting.

Fluting Scissors—See Scissors, Fluting.

Fodder Squeezers—See Squeezers, Fodder.

Forks—

Hay, Maure, &c., Asso. List.....

Hay, Maure, &c., Phila. List.....

Plated, see Spoons.

Frames—

White Vermont.....

Red, Polished and Varnished.....

Screen, Window and Door—

Porter's Pat. Window and Door Frame.....

Warner's Screen Corner Irons.....

Stearns' Frames and Corners.....

Hangers—

Barn Door, old patterns.....	50¢10¢10¢70¢
Barn Door, New England.....	50¢10¢10¢70¢
Samson Steel Anti-Friction.....	55¢
Orleans Steel.....	55¢
Hamilton Wrought Wood Track.....	55¢
U. S. Wood Track.....	55¢
Champion.....	50¢10¢
Rider and Wooster, Medina Mfg. Co.'s List.....	70¢
Olmax Anti-Friction.....	55¢
Olmax Anti-Friction for Wood Track.....	55¢
Smith for Wood Track.....	55¢
Seed's Steel Arm.....	50¢
Challenge, Barn Door.....	50¢
Sterling.....	50¢50¢10¢
Victor, No. 1, \$15.00; No. 2, \$16.00; No. 3, \$18.00.....	50¢25¢
Chertree.....	50¢10¢
Kidder.....	50¢10¢
Ross.....	50¢10¢
Best Anti-Friction.....	50¢10¢
Duplex (Wood Track).....	50¢10¢5¢
Terry's Pat., 7 dos pr. 4 in, \$10.00; 5 in, \$15.00.....	50¢10¢
Terry's Steel Anti-Friction Leader.....	50¢10¢
Terry's Steel Anti-Friction Ideal.....	50¢10¢
Cronk's Patent, Steel Covered.....	50¢5¢
Wood Track Iron Clad, 4 ft. 10".....	50¢

Carrier Steel Anti-Friction.....	50¢10¢
Architect, 7 set \$5.00.....	30¢
Bellows.....	50¢10¢
Felix, 7 set \$4.50.....	30¢
Richards.....	30¢50¢10¢
Lane's Standard.....	50¢5¢10¢
Lane's New Standard.....	50¢5¢10¢
Lane's Parlor.....	40¢
Ball Bearing Door Hanger.....	50¢10¢
Warner's Pat.....	50¢10¢
Stearns' Anti-Friction.....	50¢10¢
Stearns' Challenge.....	50¢10¢
Faultless.....	40¢40¢5¢
American, 7 set \$5.00.....	40¢10¢
Rider & Wooster, No. 1, 2, 3, 4; No. 2, 7 set.....	40¢
Paragon, Nos. 1, 2 and 3.....	40¢
Cincinnati.....	25¢10¢
Paragon, Nos. 5, 6, 7 and 8.....	20¢10¢
Prescott.....	50¢50¢10¢
Wickel Cast Iron.....	50¢
Wickel, Malleable Iron and Steel.....	40¢
Scranton Anti-Friction Single Strap.....	45¢
Wild West, 4 in. Wheel, \$15.00; 5 in. Wheel, \$21.00.....	45¢
Star.....	40¢10¢40¢10¢5¢
May.....	60¢5¢10¢
Berry.....	40¢10¢
Interstate.....	50¢
Magie.....	50¢
Pentulum, Payson's.....	45¢
Moody.....	45¢

Harness Snaps—See Snaps.**Hatchets—**

American Axe and Tool Co.	
Blood's.....	
Hunt's.....	
Eur's.....	
Mann's.....	
Peck's.....	
Underhill's.....	40 & 10
Buffalo Hammer Co.	50 & 5
Fayette St. Plumb.	
C. Hammond & Son.....	
Kelly's.....	
Sargent & Co.....	
P. S. & W. Co.....	
Ten Eyck Edge Tool Co.....	
Collins.....	10¢
Schnitz, Lohoff & Co.....	50¢50¢5¢

Hay and Straw Knives—See**Knives.****Hinges—**

Blind Hinges—	
Parker.....	75¢25¢
Huffer.....	50¢
Clark's, Nos. 1, 2, 3, 4 and 50.....	75¢10¢5¢90¢
Clark's Mottise Gravity.....	50¢
Sargent's Nos. 1, 2, 3, 4, 11, 12.....	75¢10¢5¢10¢25¢
Sargent's, No. 12.....	77¢10¢10¢
Reading's Gravity.....	75¢10¢75¢10¢5¢
Shepard's.....	75¢10¢
Niagara.....	50¢
Buffalo.....	50¢
Clark's Genuine Pattern.....	50¢
O. S. Lull & Porter.....	75¢10¢
Acme, Lull & Porter.....	75¢
Queen City Reversible.....	70¢10¢5¢75¢
Clark's Lull & Porter, Nos. 0, 1, 1 1/2, 2, 2 1/2, 3.....	75¢10¢
North's Automatic Blind Hinges, No. 2, for Wood, \$5.00; No. 3, for Brick, \$11.50.....	10¢

Gate Hinges—

Western.....	7 dos \$4.40, 60¢
E. E. Reversible.....	7 dos \$7.00, 55¢
Clark's, Nos. 1, 2, 3.....	60¢10¢5¢
N. Y. State.....	7 dos \$5.00, 55¢10¢
Automatic.....	7 dos \$12.50, 50¢
Shepard's.....	60¢10¢5¢

Spring Hinges—

Geer's Spring and Blank Butts.....	40¢
Union Spring Hinge Co.'s List, March 1886.....	25¢
Barker's Double Acting.....	25¢
Union Mfg. Co.....	25¢
Buckner's.....	30¢
Buckman's.....	15¢20¢
Chicago.....	30¢
Bardley's Patent.....	30¢
Acme.....	30¢
U. S.....	25¢10¢
Empire and Crown.....	20¢
Hero and Monarch.....	55¢
American, Gem, and Star.....	20¢
Oxford.....	10¢
Wiles.....	10¢
Devore's.....	40¢
Rex.....	40¢
Royal.....	60¢
Reliable.....	60¢
Champion.....	60¢
Stearns.....	60¢
Samson, 7 gross.....	\$14.00

Wrought Iron Hinges.

List February 14, 1891.

Strap and Y..... 50¢10¢5¢

Corrugated Strap & T.....	50¢50¢10¢
Screw Hook and Strap.....	14 to 30 in, 7 1/2, 4¢ 25 to 36 in, 7 1/2, 3¢
Screw Hook and Eye.....	14 in, 7 1/2, 4¢ 16 in, 7 1/2, 5¢ 18 in, 7 1/2, 5¢
Rolled Blind Hinges, Nos. 333 and 34.....	50¢10¢
Rolled Blind Hinges, Nos. 333 and 34.....	50¢10¢
Rolled Plate.....	70¢10¢
Rolled Raised.....	70¢10¢
Plate Hinges 8, 10 & 12 in, 7 1/2.....	50¢
"Providence" over 12 in, 7 1/2.....	4¢

Hoes—

D. & H. Scovill.....	30¢
Lane's Crescent Planters Pattern.....	45¢5¢
Lane's Razor Blade, Scovill Pattern.....	30¢
Maynard, S. & O. Pat.....	45¢5¢
Sandusky Tool Co., S. & O. Pat.....	70¢70¢
Am. Axe and Tool Co., S. & O.....	5¢
Chattanooga Tool Co., S. & O. Pat.....	50¢
Grub.....	50¢10¢

Handled—

Garden, Mortar, &c.....	70¢
Planter's, Cotton &c.....	70¢
Warren Hoe.....	60¢
Magie.....	7 dos \$4.00

Hog Rings and Rings—See**Rings and Rings.****Hoisting Apparatus—See****Hoisting.****Hollow-Ware—See Ware, Hollow.****Holders.**

Bag, Sprengle's Pat.....	7 dos \$15.....
Bit, Extension.....	40¢40¢10¢
Barber's, 7 dos \$15.00.....	40¢40¢10¢
Ives, 7 dos \$20.00.....	60¢5¢10¢
Diagonal.....	7 dos \$24.00, 40¢
Angular.....	7 dos \$24.00, 40¢5¢

File and Tool—

Half Pat.....	7 dos \$4.00; 25¢
Nicholson File Holders.....	30¢
Dick's Tool Holder.....	30¢

Hooks—

Cast Iron—	
Bird Cage, Sargent's List.....	50¢10¢10¢
Bird Cage, Reading.....	50¢10¢10¢
Clothes Line, Sargent's List.....	50¢10¢10¢
Clothes Line, Reading List.....	50¢10¢10¢
Coating Sargent's List.....	50¢10¢10¢
Harnes, Reading List.....	50¢10¢10¢
Coat and Hat, Sargent's List.....	50¢10¢10¢
Coat and Hat, Reading.....	50¢10¢10¢

Wrought Iron—

Cotton.....	7 dos \$1.25
Cotton Pat. (N. Y. Mallet & Handle Wks.).....	30¢
Tassel and Picture (T. & S. Mfg. Co.).....	50¢
Wrought Staples, Hooks, &c.....	See Wrought Goods.

Wire—

Wire Coat and Hat, Gem, Hat April, 1886.....	60¢60¢10¢
Wire Coat and Hat, Miles, Hat April, 1886.....	50¢50¢10¢
Indestructible Coat and Hat.....	45¢45¢5¢
Wire Coat and Hat, Standard.....	60¢60¢10¢
Handy Hat and Coat.....	50¢10¢60¢
Steady Ceiling Hooks.....	50¢10¢60¢
Belt.....	80¢80¢10¢
Atlas, Coat and Hat.....	60¢60¢10¢
Bright Wire Goods, see Wire.....	

Miscellaneous.

Grass, No. 2, \$2.00; No. 3, \$2.25; No. 4, \$2.50	
Nolin's Grass.....	7 dos \$2.25
Bush.....	60¢60¢
Whiffletree—Patent.....	50¢
Hooks and Eyes—Malleable Iron.....	70¢70¢10¢
Hooks and Eyes—Brass.....	70¢70¢10¢
Fish Hooks, American.....	25¢5¢
Bench Hooks.....	See Bench Stops.

Horse Nails—See Nails, Horse.**Horse Shoes—See Shoes, Horse.****Hose, Rubber—**

Competition.....	75¢75¢10¢25¢
Standard.....	60¢10¢10¢
Extra.....	90¢60¢10¢
N. Y. B. & P. Co., Para.....	50¢10¢
N. Y. B. & P. Co., Extra.....	40¢40¢5¢
N. Y. B. & P. Co., Dundee.....	60¢10¢ 60¢

Hushers—

Hair's Adjustable.....	7 gr \$3.00
Hair's Adjustable Clipper.....	7 gr 7.00
Hubbard's Solid Steel.....	7 gr 4.00

Indurated Fiber-Ware—See**Ware, Indurated Fiber—****Irons.**

Sad—	
From 4 to 10, at factory.....	7 100 B, \$2.30 to \$2.40
Self-Heating.....	7 dos \$9.00
Self-Heating, Tailors.....	7 dos \$18.00
Mrs. Pott's Irons.....	60¢60¢10¢
Enterprise Star Irons.....	60¢60¢10¢
X Cold Handle Sad Iron.....	60¢60¢10¢
Ideal Irons new list.....	50¢10¢5¢ 10¢10¢
Salamanca, Irons.....	20¢
B. H. Sad Irons.....	3¢3¢4¢
Combined Fluter and Sad Iron.....	7 dos, \$16.00
For Reversible, Self-Fluter.....	7 dos \$24.00
Chinese Laundry (H. E. Butt Co.) \$5¢, 15¢	
New England.....	5¢, 15¢
Mahony's Troy Pol. Irons.....	25¢
Sensible, list Jan. 91.....	50¢10¢5¢
Sensible Tailor's Irons.....	33¢
National Self-Heating.....	30¢

Soldering.

Soldering Coppers.....	7 B 19 @ \$1¢
Cover's Adjustable, list Jan. 1 1886.....	35¢25¢

Irons, Pinking, per doz., 50¢.**Jack Screws—See Screws.****Jack, Wagen.**

Daily.....	33¢4¢
Victor.....	33¢4¢
Lockport.....	30¢

Kettles—

Brass, Spun, Plain, list Jan. 1, '91, 35¢5¢	
Brass, Spun, Pld. W. M. list Jan. 1, '91, 20¢	
Enameled and Tea—See Hollow Ware.	

Keys—

Lock Ass'n list Dec. 30, 1886.....	50¢10¢
Eagle, Cabinet, &c.....	50¢5¢
Hotchkiss' Brass Blanks.....	30¢25¢
Hotchkiss, Copper and Tinned.....	40¢
Hotchkiss' Pad. and Cab.....	35¢
Ratchet Red Keys.....	7 dos \$4.00, 15¢
Wollensak Tinned.....	50¢10¢

Knife Sharpeners—See**Knives.**

Wilson's Butcher Knives, list Dec. 8, 1890.....	25¢
Ames' Butcher Knives.....	30¢
Foster Bros. Butcher, &c.....	40¢
Jordan's A.A.A. Butchers, list.....	not
Nichols' Butcher Knives.....	40¢10¢
W. W. Wilson, Butcher, 6 in., \$2.00; 7 in., \$2.70; 8 in., \$3.50, &c.....	30¢25¢
Ames' Bread Knives.....	7 dos \$1.50, 15¢20¢
Ames' Shoe and Bread.....	20¢
Hay and Straw.....	See Hay Knives.
Table and Pocket.....	See Cutlery.
Corn, Auburn Mfg. Co. Western Pat.....	\$2.00
Corn, Auburn Mfg. Co. Crescent.....	\$3.50

Low—**Bradley's.....****Wadsworth's.....****Drawing—****Witherby.....****Mix & W.....****New Haven.....****Douglas.....****Watrous.....****L. & J. White.....****Bradley's.....****Adjustable Handle.....****Wilkinson's Folding.....****Hay and Straw—****Lighting, from jobbers.....****Wadsworth's.....****Carters' Needle.....****Heath's.....****Auburn Hay, Com. and Spear Point.....****Auburn, Straw.....****Nolin's Hay.....****Mining.****Am. (3rd quality), 7 gr., 1 blade, 7¢;****3 blades, \$15; 5 blades, \$18.....****Lothrop's.....****Smith's, 7 dos, Single, \$2.00; Double, 3¢****Knapp & Cowles.....****Buffalo Adjustable.....****Buffalo Double Adjustable.....****Doors—****Door, General.....****Door, Por. Nickel.....****Door, Por. Plated, Nickel.....****Drawer, Porcelain.....****Hemlock Door Knobs.....****Yale & Towne Wood, list Dec., 1885.....****Carters' Plain.....****Furniture, W. S. S.....****Base, Rubber Tip.....****Picture, Judd's.....****Picture, Sargent's.....****Picture, Hemlock.....****Shutter, Porcelain.....****Carriage, Jap.....****Bardley's Wood Door, Shutter, &c.....****Ladders—****Melting, Sargent's.....****Melting, Reading.....****Melting, Monroe's Pat.....****Melting, P. S. & W.....****Melting, Warner's.....****Lanterns—****Regular, with Guard.....****3 1/2 in. Life, with Guard.....****Scua's Life, with Guard.....****Anti-Friction, with Guard.....****Brass Plate, Sq. Lift, G. and.....****Cop. Plate, Sq. Lift, Guard.....****Police Lanterns (including packages),****2 1/2 in. Bull's-eye Police regular.....****3 in. Bull's-eye Police regular.....****2 1/2 in. Bull's-eye Police flash light.....****3 in. Bull's-eye Police flash light.....****Lawn Mowers—See Mowers, Lawn.****Leaders, Cattle.****Humason, Beckley & Co.'s.....****Hotchkiss.....**

Mallets.
Hickory..... 20¢10¢30¢10¢10¢
Lignumvite..... 30¢10¢30¢10¢10¢
B. & L. Block Co., Hickory & L. V.
30¢30¢10¢

Mattacks, Regular Hat.
60¢10¢60¢10¢10¢

Measures.
Standard Fiberglass, No. 1, peck, 7
down, 44; 1/2 peck, 38.50.

Meat Cutters.—See Cutters, Meat.

Menders, Harness.
Per doz..... \$2.00

Mills.
Coffee—
Box and Side, List Jan. 1, 1888, 60¢10¢10¢
Net prices are often made which are
lower than above discount.

American, Enterprise Mfg. Co. 20¢10¢10¢
The Swift, Lane Bros..... 20¢10¢

Mining Knives.—See Knives,
Mining.

Molasses Gates.—See Gates, Mo-
lasses.

Money Drawers.—See Drawers,
Money.

Mowers, Lawn.
Philadelphia..... 70¢10¢
Pennsylvania and Continental..... 70¢
New Model and Excel for 60¢10¢10¢
Other Machines..... 60¢10¢10¢75¢

Muzzles.
Safety..... 70¢10¢, 35¢

Nails.
Cut and Wire. See Trade Report.

Wire Nails, Papered.
Association list, Apr. 11, '92 30¢10¢10¢
Tack Mfrs' list..... 70¢10¢10¢
Wire Nail, Standard Penny.
Card June 1 '89 base..... \$1.95 to \$2.00

Nose.
Nos. 6 7 8 9 10
American..... 84¢ 84¢ 84¢ 84¢ 84¢ net
Ansible..... 38¢ 20¢ 20¢ 24¢ 24¢

Clinton, Wm. 10¢ 17¢ 16¢ 16¢ 14¢ 30¢10¢
Kasey..... 28¢ 20¢ 20¢ 24¢ 24¢

Lyra..... 10¢ 17¢ 16¢ 16¢ 14¢ 40¢ 5¢
Snowden..... 19¢ 17¢ 16¢ 16¢ 14¢ 40¢ 5¢
Vulcan..... 33¢ 21¢ 20¢ 19¢ 18¢ 20¢
Northwest..... 25¢ 23¢ 23¢ 24¢ 20¢

A. C..... 35¢ 23¢ 23¢ 24¢ 20¢
O. B. K..... 26¢ 23¢ 23¢ 24¢ 20¢

Hand S..... 25¢ 23¢ 23¢ 24¢ 20¢
Champlain..... 28¢ 26¢ 26¢ 24¢ 20¢

Saranac..... 23¢ 21¢ 20¢ 19¢ 18¢ 40¢ 5¢
Champion..... 26¢ 23¢ 23¢ 24¢ 20¢

Capewell..... 19¢ 18¢ 17¢ 16¢ 14¢ 10¢
Ancho..... 23¢ 21¢ 20¢ 19¢ 18¢ 30¢
Western..... 33¢ 21¢ 20¢ 19¢ 18¢ 30¢
Empire Bronzed..... 14¢ 5¢

Picture.
Brass Head, Sargent's list..... 50¢10¢10¢
Brass Head, Combination list..... 50¢10¢
Porcelain Head, Sargent's list..... 50¢10¢10¢
Porcelain Head, Combination list..... 40¢10¢
Kilo Patent..... 40¢

Wall Papers.—See Papers, Wall.

Wall Sets.—See Sets, Wall.

Wut Crackers.—See Crackers, Nut.

Wut.—List Dec. 18, 1889.
Square, Hex.
Hot Pressed..... 5.35¢ 5.00¢ off list.
Cold Punched..... 5.00¢ 5.10¢ off list.
In packages of 100 lb. add 1-10¢ lb. add
1/2¢ lb. net.

Oakum.
Best or Government..... 7¢ 6¢10¢71¢
U. S. Navy..... 7¢ 5¢10¢9¢
Navy..... 7¢ 5¢10¢9¢

Oilers.
Zinc and Tin..... 60¢10¢70¢5¢
Brass and Copper..... 60¢10¢50¢10¢5¢
Malleable, Hammer, Improved, No. 1,
\$2.50; No. 2, \$4.00; No. 3, \$4.40 10¢10¢5¢
Malleable, Hammer, Old Pattern, same
list..... 40¢
Prior's Pat. or "Paragon" Zinc..... 50¢10¢10¢
Prior's Pat. or "Paragon" Brass..... 50¢
Olmstead's Tin and Zinc..... 50¢
Olmstead's Brass and Copper..... 50¢
Broughton's Zinc..... 60¢
Broughton's Brass..... 50¢
Gem P. D. & Co..... 70¢
Steel, Draper and Williams..... 50¢
Openers, Can.
Messenger's Comet..... 70¢10¢, 28¢
American..... 70¢10¢, 28¢
Duplex..... 25¢, 15¢20¢
Lynman..... 70¢10¢, 28¢
No. 4 French..... 70¢10¢, 28¢
No. 5, Iron Handle..... 70¢10¢, 28¢
Eureka..... 70¢10¢, 28¢
Sardine Sissors..... 70¢10¢, 28¢
Star..... 70¢10¢, 28¢
Sprague, No. 1, \$2.00 2, \$2.30; 3, \$2.50
World's Best, 70¢10¢, 28¢
No. 2, \$3.00; No. 3, \$3.00..... 50¢10¢
Universal, 70¢10¢, 28¢
Domestic, 70¢10¢, 28¢
Champion 70¢10¢, 28¢
Packing, Steam.
Standard..... 70¢10¢10¢
Extra..... 70¢10¢10¢
N. Y. B. & P. Co., Standard..... 50¢
N. Y. B. & P. Co., Empire..... 50¢
N. Y. B. & P. Co., Salamander..... 50¢
Jenkins' Standard, 70¢10¢, 28¢

Miscellaneous.
American Packing..... 10¢11¢ 5¢
Italian Packing..... 10¢11¢ 5¢
Italian Packing..... 10¢11¢ 5¢
Italian Packing..... 10¢11¢ 5¢

Pails.
Galvanized Iron—
Quarts 10 13 14
Hill's Light Weight, 70¢10¢ 3.00 3.35
Hill's Heavy Weight, 70¢10¢ 3.25 3.75
Holwig's..... 2.50 2.75 3.00
Sidney Shepard & Co..... 2.25 2.55 3.05
Iron Clad..... 2.25 2.75 3.05
Fire Buckets..... 2.75 3.25 3.50
Buckets, see Well Buckets.

Indurated Fibre Ware.—25¢
Star Pail, 13 qt..... 70¢10¢ 3.50 4.00
Stable and Milk, 14 qt..... 70¢10¢ 3.50 4.00
Fire Pail, deep..... 70¢10¢ 3.50 4.00
Fire Pail, round bottom..... 70¢10¢ 3.50 4.00

Standard Fibre Ware.
Plain. Dec'd
Water Pail, 13 qt., per doz..... \$4.00 \$4.50
Dairy Pail, 14 qt., per doz..... 4.50 5.00
Fire Pail, No. 1, 12 qt., per doz..... 4.50 5.00
Sugar Pail..... 5.00 5.50
Rorse Pail..... 5.00 5.50
Buggy Pail..... 4.00 4.50
Slop Jars (bal. trap)..... 8.00 9.00
Chamber Pail, 14 qt..... 6.50 7.50

Pans.
Dripping.
Small sizes..... 70¢10¢ 3.50 4.00
Large sizes..... 70¢10¢ 3.50 4.00
Silver & Co. (Covered)..... 40¢

Fry.
Standard List:
No..... 0 1 2 3 4
70¢10¢ 3.00 3.75 4.25 4.75 5.25
No..... 5 6 7 8 9
70¢10¢ 5.00 5.50 6.00 6.50 7.00
Polished, regular goods..... 75¢10¢10¢
Acme Fry Pans..... 60¢10¢

Dust.
Steel Edge, No. 1..... 70¢10¢ 1.75

Paper and Cloth.
Sand and Emery—
List April 19, 1886..... 50¢10¢10¢
Sibley's Emery and Crocus Cloth..... 80¢

Parers.
Advance..... 70¢10¢ 4.75
Baldwin..... 70¢10¢ 5.25
Bonanza..... 70¢10¢ 5.00
Daisy..... 70¢10¢ 4.00
Dandy..... 70¢10¢ 7.50
Eclipse..... 70¢10¢ 6.00
Eureka, 1889..... 70¢10¢ 16.00
Family Bay State..... 70¢10¢ 18.00
Favorite..... 70¢10¢ 5.00
Gold Medal..... 70¢10¢ 4.00
Ideal..... 70¢10¢ 4.00
Improved Ray State..... 70¢10¢ 30.00
Little Star..... 70¢10¢ 4.50
Monarch..... 70¢10¢ 13.50
New Lightning..... 70¢10¢ 5.50
Oriole..... 70¢10¢ 4.00
Penn..... 70¢10¢ 4.00
Perfection..... 70¢10¢ 4.00
Pomona..... 70¢10¢ 1.00
Rocking Table..... 70¢10¢ 6.00
Turn Table..... 70¢10¢ 4.50
Victor..... 70¢10¢ 13.50
Waverly..... 70¢10¢ 4.00
White Mountain..... 70¢10¢ 4.00
78..... 70¢10¢ 4.25
78..... 70¢10¢ 7.00

Polish.
White Mountain..... 70¢10¢ 4.50
Antrim Combination..... 70¢10¢ 5.50
Hoosier..... 70¢10¢ 13.50
Saragosa..... 70¢10¢ 4.50

Pencils.
Faber's Carpenters..... high list 50¢
Faber's Round Gilt..... 70¢10¢ 5.25
Dixon's Lead..... 70¢10¢ 4.50
Dixon's Lumber..... 70¢10¢ 6.75
Dixon's Carpenters..... 10¢

Picks.
Railroad or Adze Eye, 5 to 6, \$12.00;
6 to 7, \$13.00..... 60¢10¢10¢10¢5¢

Picture Nails.—See Nails, Picture.

Pinking Irons.—See Irons, Pinking.

Pins.
Hudson, Beckley & Co.'s..... 60¢10¢
Sargent & Co.'s..... 117 and 118..... 60¢10¢
Peck, Stow & W. Co..... 50¢10¢10¢10¢5¢
Curtain.
Silvered Glass..... net
White Enamel..... net

Planes, Wrought Iron.
List September 18, 1889.
1 1/4 and under, Plain..... 60¢10¢10¢
1 1/4 and under, Galvanized..... 50¢10¢ 1.15
1 1/4 and over, Plain..... 70¢10¢ 1.15
1 1/4 and over, Galvanized..... 50¢10¢10¢
Boiler Tubes,
Sizes up to 2 1/2 in. inclusive..... 57¢10¢10¢
Sizes 3 in. and larger..... 60¢10¢
Casing..... 50¢
Inserted Joints Casing..... 50¢
Steel Boiler Tubes..... 50¢

Planes and Plane Irons.
Wood Planes—
Molding..... 40¢10¢
Bench, First Quality..... 50¢10¢
Bench, Second Quality..... 55¢10¢
Bailey's (Stanley R. & L. Co.)..... 50¢10¢
Iron Planes.
Bailey's (Stanley R. & L. Co.)..... 50¢10¢
Miscellaneous Planes (Stanley R. & L. Co.)..... 50¢10¢
Steers' Iron Planes..... 50¢10¢10¢
Meriden Mfg. Iron Co.'s..... 40¢10¢10¢
Davis' Iron Planes..... 40¢10¢10¢
Birmingham Plane Co..... 50¢10¢10¢
Gage Tool Co.'s Self-Setting..... 50¢10¢10¢
Chaplin's Iron Planes..... 40¢10¢10¢
Sargent's..... 50¢10¢10¢10¢
Standard Tool Co..... 50¢10¢10¢

Plane Irons.
Butcher's..... 45¢10¢, 35¢ 25¢ to 30¢
Buck Bros..... 30¢
Auburn "Thistle"..... 30¢10¢
Sawdust..... 30¢
S. I. J. White..... 25¢
Stanley R. & L. Co..... 50¢10¢

Plates.
Feltce..... 70¢10¢ 6.00 6.50

Pliers and Nippers.
Button's Patent..... 50¢10¢10¢
Hall's No. 2, 5 in., \$13.50; No. 4, 7 in.
\$21.00 70¢10¢ 40¢
Hudson & Beckley Mfg. Co. 50¢10¢10¢
Lindsay's Giant..... 40¢
Gas Pliers..... 60¢

Gas Pliers, Custar's Nickel Plated..... 60¢10¢
Eureka Pliers and Nippers..... 40¢
Stanley's Parallel..... 30¢
P. S. & W. Cast Steel..... 50¢
P. S. & W. Tinner's Cutting Nippers..... 30¢
Carew's Pat. Wire Cutters..... add 6¢ dis 10¢
Morrell's Parallel, 70¢10¢, 30¢10¢
Cronk's 8 in., \$16.00; 10 in., \$21.00.
50¢10¢10¢
Cronk's Button Pattern..... 50¢10¢10¢
Cronk's Carrier Pliers..... 60¢10¢10¢

Plumbs and Levels.
Regular List..... 75¢10¢75¢10¢10¢
Stanley's Duplex..... 30¢10¢
Stanley's Handy..... 30¢10¢
Diston's..... 50¢
Pocket Levels..... 70¢10¢70¢10¢10¢
Davis Iron Levels..... 30¢
Davis' Inclinoimeters..... 10¢10¢

Punchers.
Buffalo Steam Egg Poachers, 70¢10¢, No. 1, \$6.00; No. 2, \$6.00..... 25¢
Silver & Co., 6-Ring, 70¢10¢; 5-Ring 70¢10¢

Pikes, Animal.
Bishop's I. L..... 70¢10¢ 6.00
Bishop's O. K..... 70¢10¢ 5.25
Bishop's Pioneer..... 70¢10¢ 5.75
Bishop's American..... 70¢10¢ 5.75
Eagle, Double Stale..... 70¢10¢ 5.75
Eagle, Single Stale..... 70¢10¢ 5.75
Bolding..... 70¢10¢ 5.00

Police Goods.
R. I. Tool Co., Handcuffs, \$15.00 70¢10¢
R. I. Tool Co., Leg Irons, \$25.00 70¢10¢
Tower's..... 35¢
Daley's Improved Handcuffs: 2 Hands,
Polished, 70¢10¢ 48.00; Nickel, 70¢10¢ 48.00; 3 Hands, Polished, 70¢10¢ 48.00; Nickel, 70¢10¢ 48.00.
J. P. Lovell's Police Goods..... 35¢

Polish, Metal.
Prestolite Paste..... 30¢
Prestolite Paste..... 30¢
Gaston's Silver Compound..... 30¢10¢

Polish, Stone.
Joseph Dixon's..... 70¢10¢ 10¢
Gem..... 70¢10¢ 10¢
Gold Medal..... 70¢10¢ 25¢
Mirror..... 70¢10¢ 10¢
Lustror..... 70¢10¢ 10¢
Ruby..... 70¢10¢ 10¢
Rising Sun, 5 gro lots..... 70¢10¢ 10¢
Dixon's Plumbago..... 70¢10¢ 10¢
Boynton's Noon Day, 70¢10¢ 10¢
Parlor Pride Stove Enamel..... 70¢10¢ 10¢
Yates' Liquid, 70¢10¢ 10¢
70¢10¢ 10¢ 10¢ 10¢
Yates Standard Paste Polish, 10-3 cans..... 70¢10¢ 10¢

Jet Black..... 70¢10¢ 10¢
Japanese..... 70¢10¢ 10¢
Dreside..... 70¢10¢ 10¢
Diamond..... 70¢10¢ 10¢
Bonnell's Liquid Stove Polish..... 70¢10¢ 10¢
Bonnell's Paste Stove Polish..... 70¢10¢ 10¢
Black Eagle Benzine Paste, 5 and 10 lb cans..... 70¢10¢ 10¢
Black Jack Water Paste, 5 and 10 lb cans..... 70¢10¢ 10¢
Nickel Plate Paste..... 70¢10¢ 10¢
Crown Paste..... 70¢10¢ 10¢
Crown Paste, in 5 and 10 lb pails..... 70¢10¢ 10¢
Black Flag..... 70¢10¢ 10¢
Black Flag, 5 and 10 lb pails..... 70¢10¢ 10¢
Black Flag, Liquid, in bottles, 70¢10¢ 10¢
Diamond Rock Nickel Cleaner..... 70¢10¢ 10¢

Peppers, Corn.
Round or Square, 1 qt., 70¢10¢10¢10¢
Round or Square, 1 1/2 qt., 70¢10¢10¢10¢
Round or Square, 3 qt., 70¢10¢10¢10¢

Post Hole and Tree Augers and Diggers.—See Diggers, Post Hole, etc.

Pots.
Glue—
Tinned..... 40¢10¢40¢10¢10¢
Enamelled..... 40¢10¢40¢10¢10¢
Family, Howe's "Eureka"..... 40¢
Family, L. F. C.'s "Handy"..... 50¢

Powder.
In existence.....
Fine sporting, 1 lb each..... \$0.90
Duck, 1 lb each..... .60
Rifle, 1 lb each..... .30
Rifle, 1/2 lb each..... .15
Rifle, 1/4 lb each..... .15

Rifles.
Rifle, 25 ft. kegs..... \$5.00
Rifle, 12 1/2 ft. kegs..... 7.75
Rifle, 6 ft. kegs..... 1.50
Duck, 12 1/2 ft. kegs..... 5.75
Duck, 6 ft. kegs..... 3.00
Trap, 25 ft. kegs..... 6.00
Trap, 12 1/2 ft. kegs..... 3.25
Trap, 6 ft. kegs..... 1.75

Preserves.
Fruit and Jelly—
Enterprise Mfg. Co..... 30¢10¢30¢
Hens..... 70¢10¢ 30¢
Shepard's Green City..... 40¢
Silver & Co..... 70¢10¢ 30¢
See Shears.

Pullers.
Nail.
Scranton..... 70¢10¢ 33¢10¢
Curtis Hammer..... 70¢10¢ 30¢
Giant, No. 1..... 70¢10¢ 10¢
Giant, No. 2..... 70¢10¢ 10¢
Pollock..... 70¢10¢ 25¢
Eclipse..... each, 20¢ net
Economy..... 70¢10¢ 10¢

Pulleys.
Hot House, Awning, &c..... 60¢10¢
Japanned Screw..... 60¢10¢
Brass Screw..... 60¢10¢
Japanned Side..... 60¢10¢
Japanned Clothes Line..... 60¢10¢
Empire Sash Pulley..... 60¢10¢
Moore's Sash, Anti-Friction..... 60¢10¢
Hay Fork, Solid Eye, 50¢10¢10¢10¢
Hay Fork, "Anti-Friction," 5 in. Solid, 50¢10¢
Hay Fork, "F" Common and Pat. Bushed..... 30¢
Hay Fork, Tarbox Pat. Iron..... 30¢
Hay Fork, Reed's Self-Lubricating..... 40¢
Shade Back..... 40¢
Tackle Blocks..... See Blocks
Moore's Anti-Friction 5 in. Wheel, 70¢10¢ 10¢
12 in. 00..... 40¢

Pumps.
Clemens, Best Makers..... 60¢10¢10¢
Pitcher Spout, Best Makers..... 60¢10¢10¢
Pitcher Spout, Cheaper G'ds..... 70¢10¢10¢

Punches.
Saddlers' or Drive, good, 70¢10¢ 35¢
Bemis & Call Co.'s Cast Steel Drive, 50¢10¢
Bemis & Call Co.'s Springfield Socket, 50¢10¢
Spring, good quality..... 70¢10¢ 2.50 3.00
Spring, Leach's Pat..... 15¢
Bemis & Call Co.'s Spring and Check..... 40¢
Solid Tinner's P. S. & W. Co. 90¢10¢10¢ 56¢
Tinner's Hollow Punches P. S. & W. Co. 30¢10¢
Rice Hand Punches..... 15¢
Avery's Revolving..... 40¢
Avery's Saw Set and Punch, See Saw Sets.

Rail.
Sliding Door, Wrt Brass, 70¢10¢ 15¢
Sliding Door, Bronzed Wrt Iron, 70¢10¢ 15¢
Sliding Door, Iron, Painted, 70¢10¢ 44¢ 40¢
Barn Door Light, In..... 15¢
Per 100 feet..... 2.50 2.50 2.10 10¢
B. D. for N. E. Hangers.....

Small, Med. Large.
Per 100 set..... \$2.15 3.70 3.00 3.50
Terry's Steel Rail, 70¢10¢ 10¢
Victor Track Rail, 70¢10¢ 10¢
Carrier, double braced, Steel Rail, 70¢10¢ 10¢
Moore's Wrought Iron..... 40¢
Moody Steel Rail..... 40¢

Rakes.
Cast Steel, Association goods..... 60¢10¢70¢
Cast Steel, outside g'ds 60¢10¢10¢70¢25¢
Malleable..... 70¢10¢10¢
Gibbs Lawn Rake..... 70¢10¢ 20¢
Canton Lawn Rake..... 70¢10¢ 30¢
Favorite Lawn Rake..... 70¢10¢ 40¢
F. Madison Prize Bow Brace and Pea-
ces..... 60¢
Fort Madison Steel Tooth Lawn Rake,
60¢10¢..... 35¢

Razors.
J. R. Torrey Razor Co..... 30¢
Wostenholme and Butcher, \$10 to \$1.10
Jordan's AAAI, new list..... net
Jordan's AAAI, new list, new list..... net
Galvanic..... 70¢10¢ 15¢
Electric Cutlery Co..... Net

Razor Straps.—See Straps, Razor.

Rings and Ringers.
Bull Rings—
Union Nut Co..... 60¢10¢10¢10¢
Sargent's..... 60¢10¢10¢10¢
Hotchkiss' low list..... 20¢
Hudson, Beckley & Co.'s..... 70¢10¢
Peck, Stow & W. Co.'s..... 50¢10¢10¢10¢10¢
Ellich Hdw. Co., White Metal, low list,
50¢10¢10¢

Hop.
Top of the Hill Rings..... 70¢10¢ 32.00
Top of the Hill Rings..... 70¢10¢ 32.00
Hill's Improved Rings..... 70¢10¢ 32.00
Hill's Old Style Rings..... 70¢10¢ 32.00
Hill's Toms..... 70¢10¢ 32.00
Hill's Rings..... 70¢10¢ 32.00
Perfect Rings..... 70¢10¢ 32.00
Blair's Rings..... 70¢10¢ 32.00
Blair's Hog Rings..... 70¢10¢ 32.00
Blair's Hog Rings..... 70¢10¢ 32.00
Champion Rings, Double..... 70¢10¢ 32.00
Brown's Rings..... 70¢10¢ 32.00
Brown's Rings..... 70¢10¢ 32.00
Electric Hog Rings..... 70¢10¢ 32.00
Major Rings..... 70¢10¢ 32.00
Major Rings..... 70¢10¢ 32.00

Liveets and Hurts.
Iron, List Nov. 17, '87..... 40¢
Copper..... 60¢10¢
Coppered Iron, Best Brand..... 40¢
Liveets Sets.—See Sets.

Knobs.
Stair, Brass..... 25¢10¢
Stair, Black Walnut..... 70¢10¢ 40¢

Rollers.
Barn Door, Sargent's list..... 60¢10¢10¢
Acme Moore's Anti-Friction..... 50¢
Thine Barn Door to New
Thompson Mfg. Co.'s Lawn Rollers, 30¢

Ropes.
Manila, 7-16 in. diam. and larger 70¢10¢ 12¢10¢
Manila..... 70¢10¢ 12¢10¢
Manila..... 70¢10¢ 12¢10¢
Manila Tarred Rope..... 70¢10¢ 12¢10¢
Manila, Hay Rope..... 70¢10¢ 12¢10¢
Sisal..... 7-16 in. diam. and larger 70¢10¢ 10¢10¢
Sisal..... 70¢10¢ 10¢10¢
Sisal..... 70¢10¢ 10¢10¢
Sisal, Hay Rope..... 70¢10¢ 10¢10¢
Sisal, Tarred Rope..... 70¢10¢ 10¢10¢
Sisal, Medium Lash Yarn..... 70¢10¢ 10¢10¢
New Zealand, 7-16 in. and larger 70¢10¢ 10¢10¢
New Zealand..... 70¢10¢ 10¢10¢
New Zealand, 1/4 and 5-16 in., 70¢10¢ 10¢10¢
New Zealand, Hay Rope..... 70¢10¢ 10¢10¢
New Zealand, Tarred Rope..... 70¢10¢ 10¢10¢
Note.—Manufacturers' prices on above
10¢10¢ less, f.o.b. factory—less 1/4¢ for
cash

Cotton Rope..... 70¢10¢ 12¢10¢
Jute Rope..... 70¢10¢ 12¢10¢
Wire.
List February, 1892.
A I kinds..... 45¢
Rules.
Boxwood..... 30¢10¢10¢
Ivory..... 60¢10¢10¢
Shepard's Rules and Straight Edges,
Steel..... 25¢10¢

Sand Irons.—See Irons, Sand.

Sand and Emery Paper and Cloth.—See Paper and Cloth, Sand and Emery

Sash Cord.—See Cord, Sash.

Sash Locks.—See Locks, Sash.

Sash Weights.—See Weights, Sash.

Sausages.—See Sausages, Sausages.

Saws.—The following prices are
often cut by jobbers.

Diston's Circular..... 45¢10¢10¢
Diston's Cross Cut..... 45¢10¢10¢
Diston's Hand..... 25¢
Woodrough & McParlin.....
Hand, Panel and Rip..... 25¢10¢10¢
Narrow Champion Cross Cut with
Handles, 70¢10¢ 15¢10¢
Champion Thin Back Cross Cut, 70¢10¢
70¢10¢
Ch

Finware—
Stamped, Japanned and Piced, list
Jan. 20 1887.....70&10070&105
Wire Benders, Upsetters, &c—
See Benders and Upsetters, Tire.

Tools—
Coopers—
Bradley's.....30%
Barton's.....30&32&5
L. & J. White.....30&32&5
Albertson Mfg. Co.....32%
Beatty's.....30%
Sandusky Tool Co.....30&32&5
Shaves, Cincinnati Tool Co.....30%

Lumber—
Ring Peavies, "Blue Line".....dos 30.00
Ring Peavies, Common.....dos 12.00
Steel Socket Peavies.....dos 12.00
Mail, Iron Socket Peavies.....dos 12.00
Cant Hooks, "Blue Line".....dos 12.00
Cant Hooks, Common Finish.....dos 12.00
Cant Hooks, Mail, Socket Clasp, "Blue
Line" Finish.....dos 12.00
Cant Hooks, Mail, Socket Clasp, Com-
mon Finish.....dos 12.00
Cant Hooks, Clip Clasp, "Blue Line"
Finish.....dos 12.00
Cant Hooks, Clip Clasp, Common Fin-
ish.....dos 12.00
Hand Spikes.....dos 0 ft., 15.00; 8 ft.,
12.00
Pike Poles, Pike & Hook, dos, 12 ft.,
11.50; 14 ft., 12.50; 16 ft., 14.50;
18 ft., 17.50; 20 ft., 21.50
Pike Poles, Pike only, dos, 12 ft.,
10.00; 14 ft., 11.00; 16 ft., 13.00; 18
ft., 15.00; 20 ft., 20.00
Pike Poles, not ironed, dos, 12 ft.,
10.00; 14 ft., 11.00; 16 ft., 13.00; 18
ft., 15.00; 20 ft., 20.00
Setting Poles, dos, 12 ft., 14.00; 14
ft., 15.00; 16 ft., 17.00
Swamp Hooks.....dos 12.00

Saws—
Atkins' Perfection.....dos 12.00
Atkins' Excelsior.....dos 12.00
Atkins' Giant.....dos 12.00

Tobacco Cutters—See Cutters, To-
bacco.

Transom Lifters—See Lifters,
Transom.

Traps—
Gams—

Newhouse.....40&42&5
Onida Pattern.....70&105
Game, Blake's Patent.....40&10&5
Mouse and Rat—
Mouse Wood Choker, dos holes, 9&10%
Mouse, Round Wire.....dos 1.50 10%
Mouse, Cage Wire.....dos 1.50 10%
Mouse, Catcher, m. alive.....dos 2.50 15%
Mouse, Bonanza.....dos 0.50&1.00
Rat, Decoy.....dos 1.00 10%
Ideal.....dos 1.00 10%
Cyclone.....dos 1.00 10%
Hotchkiss Metallic Mouse, 5-hole traps,
dos, 7&5; in full cases, dos 60&65
Hotchkiss Imp. Rat Killer.....dos 12.50 15%
Hotchkiss New Rat Killer.....dos 12.50 15%
Schuyler's Rat Killer.....dos 12.50 15%

Trimmers—
Butter and cheese.....35%
Trimmers, Spoke—
Bonney's.....dos 10.00, 60%
Stearns'.....dos 10.00, 60%
Ives, No. 1, 12.50; No. 2, 12.50; dos.
60&10%
Douglas'.....dos 10.00, 30%
Cincinnati.....dos 10.00, 30%

Trowels—
Lothrop's Brick and Plastering.....30&10&5&35%
Reed's Brick and Plastering.....15%
Dixon's Brick and Plastering.....25&25&5%
Peace's Plastering.....25&25&5%
Clement & Maynard's.....20&20&5%
Rose's Brick.....15&20%
Brade's Brick.....25%
Worral's Brick and Plastering.....30%
Garden.....70%
Cleves' Angle Trowel, gro. No. 1, 3&6;
No. 2, 3&0; No. 3, 3&15. net 40%
Trucks, Warehouse, &c—
R. & L. Block Co's list, '82.....40%
Thompson Mfg. Co.....25%

Tubes, Boiler—
See Pipes.
Twine—
Flax Twine.....BC. H.
No. 9, 1/4 and 1/2 B. Balls.....25% 31%
No. 12, 1/4 and 1/2 B. Balls.....25% 30%
No. 15, 1/4 and 1/2 B. Balls.....25% 29%
No. 24, 1/4 and 1/2 B. Balls.....25% 28%
No. 34, 1/4 and 1/2 B. Balls.....25% 27%
No. 36, 1/4 and 1/2 B. Balls.....25% 26%
No. 38, 1/4 and 1/2 B. Balls.....25% 25%
No. 39, 1/4 and 1/2 B. Balls.....25% 24%
No. 40, 1/4 and 1/2 B. Balls.....25% 23%
No. 42, 1/4 and 1/2 B. Balls.....25% 22%
No. 44, 1/4 and 1/2 B. Balls.....25% 21%
No. 46, 1/4 and 1/2 B. Balls.....25% 20%
No. 48, 1/4 and 1/2 B. Balls.....25% 19%
No. 50, 1/4 and 1/2 B. Balls.....25% 18%
No. 52, 1/4 and 1/2 B. Balls.....25% 17%
No. 54, 1/4 and 1/2 B. Balls.....25% 16%
No. 56, 1/4 and 1/2 B. Balls.....25% 15%
No. 58, 1/4 and 1/2 B. Balls.....25% 14%
No. 60, 1/4 and 1/2 B. Balls.....25% 13%
No. 62, 1/4 and 1/2 B. Balls.....25% 12%
No. 64, 1/4 and 1/2 B. Balls.....25% 11%
No. 66, 1/4 and 1/2 B. Balls.....25% 10%
No. 68, 1/4 and 1/2 B. Balls.....25% 9%
No. 70, 1/4 and 1/2 B. Balls.....25% 8%
No. 72, 1/4 and 1/2 B. Balls.....25% 7%
No. 74, 1/4 and 1/2 B. Balls.....25% 6%
No. 76, 1/4 and 1/2 B. Balls.....25% 5%
No. 78, 1/4 and 1/2 B. Balls.....25% 4%
No. 80, 1/4 and 1/2 B. Balls.....25% 3%
No. 82, 1/4 and 1/2 B. Balls.....25% 2%
No. 84, 1/4 and 1/2 B. Balls.....25% 1%
No. 86, 1/4 and 1/2 B. Balls.....25% 0%
No. 88, 1/4 and 1/2 B. Balls.....25% 0%
No. 90, 1/4 and 1/2 B. Balls.....25% 0%
No. 92, 1/4 and 1/2 B. Balls.....25% 0%
No. 94, 1/4 and 1/2 B. Balls.....25% 0%
No. 96, 1/4 and 1/2 B. Balls.....25% 0%
No. 98, 1/4 and 1/2 B. Balls.....25% 0%
No. 100, 1/4 and 1/2 B. Balls.....25% 0%

Vises—
Solid Box.....50&10&50&10&5%
Parallel—
Fisher & Norris Double Screw.....15&10%
Stephens'.....25&35%
Fisher's.....25%
Wilson's.....25%
Howard's.....40%
Bonney's.....40&10%
Miller's Falls.....40&10%
Trenton.....40&10%
Merrill's.....15&10%
Sargent's.....50&10%
Bacon and Union.....15&10%
Double Screw Leg.....15&10%
Hopkins'.....25%
Prentiss'.....25%
Simpson's Adjustable.....40%
Moore's.....25%
Massey Quick Action.....30&25%

Saw Files—
Bonney's, Nos. 2 & 3, 15.00.....40&10%
Stearns'.....35&10&35&10%
Stearns' Silent Saw Vises.....35&10%
Sargent's.....25%
Reading.....40&10%
Wentworth.....30&10%

Miscellaneous—
Combination Hand Vises.....dos 12.00
Cowell Hand Vises.....dos 12.00
Baylor's Pipe Vises.....dos 12.00
Cincinnati.....dos 12.00
Enterprise Pipe Vises, each.....dos 12.00
Massey Combination Pipe.....dos 12.00

W—
U.M.C. & W. R. A.—R. E., 11 up.....65%
U.M.C. & W. R. A.—R. E., 9&10.....55%
U.M.C. & W. R. A.—R. E., 7.....45%
U.M.C. & W. R. A.—R. E., 5.....35%
U.M.C. & W. R. A.—P. E., 11 up.....1.15
U.M.C. & W. R. A.—P. E., 9&10.....1.50
U.M.C. & W. R. A.—P. E., 7.....1.70
U.M.C. & W. R. A.—P. E., 5.....1.90
U.M.C. & W. R. A.—P. E., 11 up.....1.70
U.M.C. & W. R. A.—P. E., 9&10.....1.50
U.M.C. & W. R. A.—P. E., 7.....1.30
U.M.C. & W. R. A.—P. E., 5.....1.10

Wagon Boxes—See Boxes, Wagon.
Washer Cutters—See Cutters,
Washer.

Wagon Jacks—See Jacks, Wagon.
Ware, Hollow, Enameled, &c—

Cast Iron, Hollow—
Hollow Hollow-Ware.....60&10%
Ground.....60&10%
Unground.....60&10%
White Enameled Ware—
Maltin Kettles.....75&75&5%
Boilers and Saucepans.....60&60&5%
Tinned Boilers and Spans.....60&60&5%
Rustless Hollow-Ware.....50&50&5%
Gray Enameled Ware—
Stove.....50%
Maltin Kettles.....60&10&10%
Boilers and Saucepans.....40&5%
Enameled—
Agate and Granite Ware, list Jan. 1,
1890.....35&410%
Ironclad Enameled Ware.....dis 35&410%

Kettles—
Galvanized Tea Kettles—
Inch.....6 7 8 9
Each.....55¢ 60¢ 75¢
Standard Fiber—
Per Dozen.
Plain, Dec'd.....2.25 2.75
Wash-Basins, 10 1/2 in.....2.25 2.75
Wash-Basins, 12 in.....2.25 2.75
Keelers, 11 1/2 in.....4.60
Cuspidors.....8.00
Spittoons, "Daisy," 3 in.....4.00 4.50
Peck Measure.....4.00
Half-Peck Measure.....3.50
See also Pails.

Indurated Fiber—35%
Spittoons, No. 2, dos.....\$8.40
Basins, Ringed, dos, No. 2.....\$3.00
Washbasins, Nested, Nos. 0, 1, 2 and 3 (4
pieces), dos nest.....\$7.50
Keelers Nested, Nos. 1, 2, 3 and 4 (4
pieces), dos nest.....\$3.90
Butter Bowls 15, 17 and 19-inch (3
pieces), dos nest.....\$1.70
Liquid Measures, pt., qt., 2 qt. and fur-
nell (4 pieces) dos set.....\$1.00
See also Pails.

Silver Plated, Hollow—
4 mo. or 5 1/2 cash in 30 days.
Reed & Barton.....40&5%
Meriden Britannia Co.....40&5%
Simpson, Hall, Miller & Co.....40&5%
Rogers & Brother.....40&5%
Hartford Silver Plate Co.....40&5%
William Rogers Mfg. Co.....40&5%

Washers—
Sis-hole.....5-15 1/4 1/2 3/4 1 1 1/2
Washers.....6 5 5.50 6
In lots less than 200, dos, add 1/4, 5-3
boxes 1st to list.

Wedges—
Iron.....dos 3 3/4
Steel.....dos 3 3/4

Weights, Sash—
Solid Eyes.....dos 1.50&1.10
Well Buckets, Galvanized—See
Buckets, Well, Galvanized.

Wheels, Well—
8 in., \$2.35; 10 in., \$2.70; 12 in., \$3.25

Wire and Wire Goods—
Iron—
Market,
Br. & Ann'd, Nos. 0 to 18.....75&10&30%
Cop'd, Nos. 0 to 18.....75&10&30%

Galv., Nos. 0 to 18.....70&70&10%
Tin'd, Tin'd list Nos. 0 to 18, 70&70&10%
Stones—
Br. and Ann'd, Nos. 15 to 18.....30%
Bright and Ann'd, Nos. 19 to 26.....30&35%
Br. and Ann'd, Nos. 27 to 36.....32&35%
Tinned.....40%
Tinned Broom Wire 18 to 31, dos.....40%
Galvanized Fence, Nos. 8 and 9, 70&10%
Brass, list Jan. 13, 1884.....25&33&45%
Copper, list Jan. 13, 1884.....33&40%
Annealed Wire on Spools.....60%
Maltin's Steel and Tin'd on Spools.....60%
Maltin's Brass and Cop. on Spools.....60%
Tate's Spooled, Tin'd & Annealed.....60&5%
Tate's Spooled Cop. and Brass.....60%
Cast Steel Wire.....60%
Stub's Steel Wire.....\$6.00 to \$8.00
Steel Music Wire, 12 to 30.....60&70%
Wire Clothes Lines, see Lines.
Wire Picture Cord see cord.

Bright Wire Goods—
Standard list.....35%
Wire Cloth and Netting—
Painted Screen Cloth, good quality,
\$100 sq. ft., \$1.40
Galvanized Wire Netting.....70&10&75%

Wire, Barb.—Prices unsettled. See
Trade Report.

Wire Rope—See Rope, Wire.

Wrenches—
American Adjustable.....40%
Baxter's Adjustable "S".....40&10&50%
Baxter's Diagonal.....40&10&50%
Coe's Genuine.....50&5%
Coe's "Mechanics".....50&10&35%
Girard Standard.....60&10%
Lamson & Sessions' Engineers'.....60&10%
Lamson & Sessions' Standard.....70&10%
P. S. & W. Agricultural.....75&10%
Girard Agricultural.....75&10%
Lamson & Sessions' Agri'l.....75&10%
Bemis & Call's
Pat. Combination.....35%
Merrick's Pattern.....35%
Briggs' Pattern.....35%
Cylinder or Gas Pipe.....40&10%
No. 3 Pipe.....40&10%
Aiken's Pocket (Bright).....30.00, 50&10%
The Favorite Pocket.....dos 4.00, 40%
Webster's Pat. Combination.....35%
Boardman's.....50&10%
Always Ready.....35&5%
Alligator.....60%
Donohue's Engineer.....50&10%
Acme, Bright.....50&5%
Acme, Nickle.....40&5%
Hercules.....70&70&5%
Walker's.....50&5%
Diamond Steel.....55&5%
Cincinnati Brace Wrenches.....55&10%
Tate's Vice Wrench.....55&10&5%

Wringers, Clothes—
Am. Wringer Co.'s list, July 15, 91, 3% cash
Colby Wringer Co., list Sept. 1, '91, 3% cash
Lovell Mfg. Co., list Jan. 1, 1892, 2 1/2 % cash
Peetless Mfg. Co., list Feb., 1892, 3% cash

Wrought Goods—
Staples, Hooks, &c, list March 17, 1892,
80&25%

PAINTS, OILS AND COLORS.—Wholesale Prices.

Animal and Vegetable Oils.

Linseed, City, raw, per gal. 43 @ ..
Linseed, City, boiled.....45 @ ..
Linseed, Western, raw.....41 @ ..
Lard, City, Extra Winter.....61 @ 61
Lard, City, Prime.....61 @ 61
Lard, City, Extra No. 1.....44 @ 42
Lard, City, No. 1.....40 @ 40
Lard, Western, prime.....50 @ 60
Cotton-seed, Crude, prime.....29 @ 29 1/4
Cotton-seed, Crude, off
grades.....26 1/2 @ 28
Cotton-seed, Summer, 1st
low, prime.....32 1/4 @ 33
Cotton-seed, Summer Yel-
low, off grades.....30 @ 31
Sperm, Crude.....64 @ ..
Sperm, Natural Spring.....67 @ 70
Sperm, Bleached Spring.....73 @ 75
Sperm, Natural Winter.....73 @ 75
Sperm, Bleached Winter.....78 @ 81
Whale, Crude.....45 @ ..
Whale, Natural Winter.....54 @ 55
Whale, Bleached Winter.....57 @ 58
Whale, Extra Bleached.....59 @ 60
Sea Elephant, Bleached.....62 @ 68
Winter.....62 @ 68
Menhaden, Crude, Sound.....30 @ 31
Menhaden, Crude, Southern.....30 @ ..
Menhaden, Light Pressed.....37 @ ..
Menhaden, Bleached W'ter.....38 @ ..
Menhaden, Extra Bleached.....40 @ 48
Tallow, City, prime.....44 @ 45
Tallow, Western, prime.....42 1/4 @ 45
Cocoanut, Ceylon.....54 @ 54 1/2
Cocoanut, Cohn.....6 @ 6 1/2
Cod, Domestic.....38 @ 40
Cod, Foreign.....43 @ 45
Red Elaine.....34 @ 38
Red Saponified.....4 1/2 @ 5
Sank.....36 @ 36
Strait.....36 @ 37
Olive, Italian, bbls.....60 @ 62
Neatfoot, prime.....50 @ 60
Palm, prime, Lagos.....5 @ 5 1/2

Mineral Oils.

Black, 30 gravity, 25 @ 30
cold test.....7 @ 7 1/4
Black, 30 gravity, 15 cold
test.....7 1/4 @ 8
Black, 30 gravity, summer.....6 @ 6 1/2
Cylinder bbls filtered.....14 @ 14

Cylinder, dark, filtered.....10 @ 12
Paraffine, 25 1/2 gravity.....11 1/4 @ 12
Paraffine, 25 gravity.....10 1/4 @ 11
Paraffine, 25 gravity.....8 @ 8 1/2
Paraffine, red, 25 1/2 gravity.....10 1/4 @ 11

Paints and Colors.

Barytes, Foreign, 7 ton.....\$32.00 @ \$34.00
Barytes, Amer. Soated.....30.00 @ 35.00
Barytes, Amer. No. 1.....15.00 @ 17.00
Barytes, Amer. No. 2.....13.00 @ 16.00
Barytes, Amer. No. 3.....11.00 @ 13.00
Blue, Celestial.....dos 6 @ 8
Blue, Chinese.....40 @ 50
Blue, Prussian.....25 @ 40
Blue, Ultramarine.....35 @ 35
Brown, Spanish.....4 1/2 @ 5
Brown, Vandyke, Amer.....3 @ 3 1/2
Brown, Vandyke, English.....6 @ 8
Carmine, No. 40, in bulk.....3.10 @ ..
Carmine, No. 40, in boxes
or barrels.....3.90 @ ..
Carmine, No. 40, in ounce
bottles.....4.50 @ ..
Chalk, in bulk.....dos ton.....3.00
Chalk, in bbls.....\$100 @ 33 @ 40
China Clay, English.....dos ton.....18.00 @ 18.00
Cobalt Oxide, prep'd.....9.00 @ 11.00
Cobalt Oxide, black, lots 100 lb.....3.50 @ ..
Cobalt, Oxide, black,
less 100 lb.....2.50 @ 2.90
Green, Paris, in bulk.....13 @ 15 1/2
Green Paris, 170 @ 175 lb.....14 @ 16
Green, Paris, small pack.....15 1/2 @ 23
Green, Chrome, ordinary.....6 @ 12
Green, Chrome, pure.....22 @ 25
Lead, Eng., B.B. white.....5 1/2 @ 10
Lead, Ann. White, dry or in oil.....7 1/4 @ 7 1/2
Eggs, lots less than 500 lb.....6 1/2 @ 7 1/2
Eggs, lots 500 lb to 5 tons.....6 1/2 @ 7 1/2
Eggs, lots 5 tons to 12 tons.....6 1/2 @ 7 1/2
Eggs, lots 12 tons and over.....6 1/2 @ 7 1/2
Lead White in oil 25 lb tin
pails add to keg price.....@ 3 1/2
Lead, White, in oil, 12 1/2 lb tin
pails, add to keg price.....@ 3
Lead, White, in oil, 1 to 5 lb as-
sorted tins, add to keg price.....@ 3 1/2
Lead, Red, bbls, and 1/2 bbls.....6 1/2 @ 7 1/2
Lead, Red, kegs.....6 1/2 @ 7 1/2

Litharge, kegs.....6 1/2 @ 7 1/2
Litharge, bbls, and 1/2 bbls.....6 1/2 @ 7 1/2
Terra, As.-Lead and Litharge.—On
lots of 500 lb or over, 60 days' time or
2 1/2 % discount for cash if paid within 15
days of date of invoice.
Ocher, Rochelle.....1.25 @ 1 1/4
Ocher, French Washed.....1 1/4 @ 3 1/4
Ocher, German Washed.....1 1/4 @ 3
Ocher, American.....1 1/4 @ 1 1/4
Orange Mineral, English.....8 1/2 @ 9
Orange Mineral, French.....10 @ 10 1/2
Orange Mineral, German.....8 1/2 @ 9
Orange Mineral, American.....8 1/2 @ 9
Paris White, English Cliff.....8 1/2 @ 9
Paris White, American.....1.00 @ 1.15
Paris White, American.....70 @ 75
Red, Indian, English.....5 1/2 @ 7
Red, Indian, American.....3 @ 6 1/2
Red, Turkey.....9 @ 14
Red, Tuscan.....9 @ 11
Red, Venetian, American.....\$100 @ 1.00 @ 1.10
Red, Venetian, English.....1.30 @ 1.35
Sienna, Italian, Burnt and
Powd. W.B.....4 @ 8
Sienna, Ital., Burnt Lumps.....1 1/4 @ 3 1/4
Sienna, Ital., Raw, Powd.....1 1/4 @ 3 1/4
Sienna, Ital., Raw Lumps.....1 1/4 @ 3 1/4
Sienna, American, Raw.....1 1/4 @ 1 1/4
Sienna, American, Burnt
and Powdered.....1 1/4 @ 1 1/4
Talc, French.....1 1/4 @ 1 1/4
Talc, American.....9 1/2 @ 13 1/4
Terra Alba, Fr. Ch. \$100 lb.....75 @ 80
Terra Alba, English.....70 @ 75
Terra Alba, American No. 1.....70 @ 75
Terra Alba, American No. 2.....45 @ 50
Umber, Turkey, Bnt. and
Powd.....3 1/4 @ 4
Umber, Turkey, Raw and
Powd.....3 1/4 @ 4
Umber, Turkey, R'w Lumps.....2 1/4 @ 3 1/4
Umber, Turkey, R'w Amer.....1 1/4 @ 1 1/4
Yellow, Chrome, Lead.....12 @ 12 1/2
Vermilion, Quicks' or, bulk.....57 @ ..
Vermilion, Quicks' or, bags.....58 @ ..
Vermilion Quicksilver,
smaller pkgs.....60 @ ..
Vermilion Washed Import.....85 @ 90
Vermilion, Imitation, Eng.....8 @ 30
Vermilion, Trieste.....90 @ 90 1/2
Vermilion, Chinese.....92 1/2 @ 98
Whitina Common, \$100 lb.....4 @ 4 1/2

Whiting, Gliders.....50 @ 60
Zinc, American, dry.....7 1/2 @ ..
Zinc, French, Red Seal.....7 1/2 @ ..
Zinc, French, Green Seal.....9 @ ..
Zinc, French, V. M. X.....7 @ ..
Zinc, Antwerp, Red Seal.....7 1/2 @ ..
Zinc, Antwerp, Green Seal.....7 1/2 @ ..
Zinc, German, L. Z. O.....7 1/2 @ 9 1/2
Zinc, V. M. in Poppy Oil, &c,
lots of 1 ton and over.....10 1/2 @ 11 1/2
lots less than 1 ton.....11 @ 11 1/2
Zinc, V. M. in Poppy Oil,
Red Seal.....10 @ 10 1/2
lots of 1 ton and over.....10 @ 10 1/2
lots less than 1 ton.....10 1/2 @ 10 1/2
Discolora.—French Zinc.—Discounts
to buyers of 10-bbl. lots of one or as-
sorted grades, 1 1/2 % bbls, 2 1/2 % bbls,
4 1/2 % bbls. No discount allowed on less
than bbl. lots.

Colors in Oil.
Black, Drop, Frankfurt.....25 @ 30
Black, Drop, English.....12 @ 15
Black, Drop, Domestic.....7 @ 10
Black, Lampblack, Best.....20 @ 35
Black, Lampblack, Common.....7 @ 18
Black, Ivory.....3 @ 15
Blue, Chinese.....35 @ 40
Blue, Prussian.....29 @ 45
Blue, Ultramarine.....12 @ 18
Brown, Vandyke.....7 @ 12
Green, Chrome.....3 @ 12
Green, Paris.....16 @ 18 1/2
Sienna, Raw.....7 @ 14
Sienna, Burnt.....7 @ 14
Umber, Raw.....7 @ 10
Umber, Burnt.....7 @ 10

Putty.
In barrels and 1/2 bbls......01 1/4 @ .01 1/4
In tubs......01 1/4 @ .01 1/4
In tin cans......01 1/4 @ .01 1/4
In bladders......01 1/4 @ .01 1/4

Spirits Turpentine.
In regular bbls..... @ 30
In machine bbls..... @ 31

Glue.

Low Grade.....dos 8 @ 10
Cabinet.....12 @ 14
Medium White.....15 @ 15
Extra White.....17 @ 20
French.....10 @ 22
English.....10 @ 15
Irish.....18 @

